

HP Rack and Power Manager User Guide



January 2004 (Second Edition)
Part Number 311371-002

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HP Rack and Power Manager User Guide

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About This Guide

This guide provides information about HP Rack and Power Manager including installation, configuration, operation, and troubleshooting.

Audience Assumptions

This guide is intended for individuals requiring information about the management of HP Uninterruptible Power Systems (UPSs) and Console Management Controllers (CMCs).

Symbols in Text

These symbols are found in the text of this guide. They have the following meanings:



CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Text Conventions

This document uses the following conventions:

- *Italic type* indicates complete titles of manuals or variables. Variables include information that varies in system output, command lines, and command parameters in text.
- **Bold type** is used for emphasis of selected on-screen elements (menu options, command names, dialog box names, and so on) and keyboard keys.
- Monospace typeface indicates code examples, screen displays, and user input.
- Sans serif typeface is used for uniform resource locators (URLs).

Related Documents

For additional information on the topics covered in this guide, refer to the following documents:

- Product user guides
- Product installation instructions
- *HP Power Products Glossary*

These documents are located on the Power Products Documentation CD or at <http://www.hp.com/products/ups>.

Getting Help

If you have a problem and have exhausted the information in this guide, you can get further information and other help in the following locations.

Technical Support

In North America, call the HP Technical Support Phone Center at 1-800-652-6672. This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored. Outside North America, call the nearest HP Technical Support Phone Center. For telephone numbers of worldwide Technical Support Centers, go to <http://www.hp.com>.

Have the following information available before you call:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level
- Power management software type and version

HP Website

For information on this product as well as the latest drivers, firmware updates, and service packs, go to <http://www.hp.com>.

Authorized Reseller

For the name of your nearest authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, see the HP website for locations and telephone numbers.

Reader's Comments

To comment on this guide, send an e-mail to ServerDocumentation@hp.com.

Introduction

HP Rack and Power Manager is enterprise-grade software that enables users to monitor, manage, and control both power and rack environments through comprehensive control of HP Uninterruptible Power Systems (UPSs) and the HP rack environmental monitor, the Console Management Controller (CMC). HP Rack and Power Manager software provides comprehensive device control in data center environments where multiple users need to access and manage many devices. A familiar browser interface provides secure remote access (128-bit Secure Socket Layer (SSL) encryption) to management agents anywhere on the network. HP Rack and Power Manager enables users to schedule system shutdowns, control power failure settings, and define UPS load segments to allow for maximum uptime of critical servers. This software offers several new features, such as the ability to configure redundant UPSs and system event handling, which enables users to establish power and environmental failure policies with programmed automatic responses.

Use HP Rack and Power Manager to monitor, manage, and control:

- HP Tower UPSs—UPS T700, UPS T1000 XR, UPS T1500 XR, and UPS T2200 XR
- HP Rack UPSs—UPS R1500 XR, UPS R3000 XR, UPS R5500 XR, UPS R6000, and UPS R12000 XR
- HP CMCs—Rack environmental monitoring devices

HP Rack and Power Manager software can run as a stand-alone power management system or be configured to run with other SNMP-management programs:

- HP Rack and Power Manager can be configured as a plug-in for HP Systems Insight Manager. For more information, refer to Appendix B in this guide.
- HP Rack and Power Manager can send traps with a URL to HP Insight Manager 7. For more information, refer to Appendix C in this guide.

This flexibility enables you to monitor, manage, and control the rack and power environments of networked and serially-attached devices (CMCs and UPSs), regardless of the system management method. For ease of configuration, HP Rack and Power Manager can be configured to perform device auto-discovery and to copy alert notifications of already managed devices to newly managed devices. To facilitate day-to-day maintenance tasks, the software provides detailed system logs and system diagnostics, including UPS battery checks.

Use HP Rack and Power Manager to:

- Customize alerts
 - Send e-mail notification messages
 - Send broadcast notification messages
 - Send SNMP traps
 - Issue computer commands
 - Perform device actions
- Monitor, manage, and control UPSs
 - Configure redundant UPSs to support servers with multiple power supplies
 - Manage a graceful shutdown of attached equipment during utility power failures
 - Manage independent UPS load segments to provide separate power control of connected equipment
 - Prioritize the timing of equipment shutdowns and reboot connected equipment by load segment
 - Shut down and reboot any UPS and attached equipment, based on a user-specified schedule
 - Delay restart by load segment after a power outage to sequence the startup of system components
 - Display UPS logs for analysis
 - Monitor the status of UPSs and perform UPS diagnostics
- Monitor, manage, and control CMCs
 - Configure and monitor the CMC sensors and options (air temperature, shock/vibration, humidity, intrusion, smoke detection, and front and back door locks)
 - Activate relay controls
 - Display CMC logs for analysis
 - Remotely or locally monitor and control rack environments
 - Take action when a negative occurrence is taking place

HP Rack and Power Manager Overview

HP Rack and Power Manager is a Web-based application that lets administrators manage large numbers of devices (HP UPSs and CMCs) in the data center from a single management console. Administrators can monitor, manage, and control devices both locally and remotely through a secure browser interface.

Example 1-1: During a utility power failure, the connected UPSs switch to battery mode. HP Rack and Power Manager can issue an e-mail alert to the system administrator and begin a prioritized system shutdown based on your settings. After power is restored, HP Rack and Power Manager can facilitate a prioritized power up for connected equipment. HP Rack and Power Manager also allows for scheduled on and off times, which promotes power conservation.

The UPS can be configured to extend runtimes for critical devices during utility power failures. For most UPSs, the receptacles on the rear panel can be divided into two or more groups, called load segments, which can be controlled independently. By shutting down a load segment that is connected to less critical equipment, the runtime for more critical equipment is extended, providing additional protection.

Example 1-2: HP Rack and Power Manager has the ability to issue commands to servers that the software recognizes. Issuing commands can be a useful tool in preventing data loss. If a CMC detects an over temperature event or a UPS detects a utility power failure event, the HP Rack and Power Management Server can be configured to issue a command to run a batch file or shell script on the affected system.

Example 1-3: HP Rack and Power Manager can be configured to monitor set thresholds for CMC sensors and take action when conditions are detected to be outside the threshold. HP Rack and Power Manager can be programmed to turn the rack fans on when the rack temperature is too warm or turn the rack fans off if smoke is detected. Should an unauthorized person attempt to enter the rack, HP Rack and Power Manager can send an alert message to the system administrator and activate an alarm relay switch that can be connected to a siren or rotating light.

Example 1-4: HP Rack and Power Manager can be configured to take action on multiple devices based on an event of a single device. If a CMC installed in a rack on the ninth floor detects an over temperature condition, HP Rack and Power Manager can be configured to send a message to the UPS powering the affected equipment and gracefully shut down the servers installed in the rack. The same is true for UPSs. If a UPS in the same rack loses utility power and goes on battery, the Management Server can be configured to send a message to the CMC installed in that same rack to unlock the rack door.

HP Rack and Power Manager Architecture

HP Rack and Power Manager leverages a distributed architecture that consists of three major components:

- Management Server
- System Agent
- Serial Relay Agent

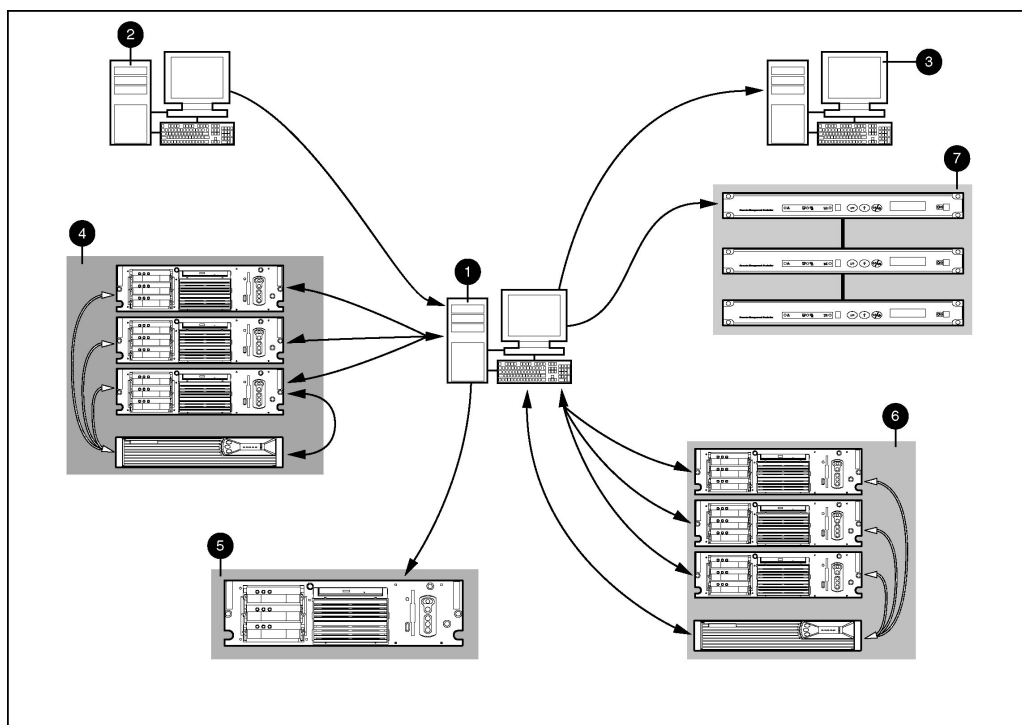


Figure 1-1: HP Rack and Power Manager architecture

| Item | Description |
|---|---|
| 1 | HP Rack and Power Management Server* |
| 2 | A remote workstation browsing in to the Management Server over the network |
| 3 | A management application, such as HP Systems Insight Manager or HP OpenView, on a remote workstation that is receiving SNMP traps from the Management Server over the network |
| 4 | A UPS that is powering multiple servers and communicating with a Management Server through a serial connection to one of the servers |
| 5 | Servers on the network that are running HP Rack and Power Management Agents receive custom commands from the Management Server |
| 6 | A UPS that is providing power to multiple servers and communicating directly with the Management Server over the network |
| 7 | CMCs that are attached to the network are managed by the Management Server |
| *A dedicated Management Server is not required. | |

Management Server

The Management Server component runs on a single server, which acts as the management console. The Management Server communicates with discovered and managed CMCs and UPSs throughout the network. The Management Server continuously polls devices for status. When an alert is detected, the Management Server acts on configured event policies.

IMPORTANT: UPS and CMC devices should be managed by a single Management Server. It is not necessary to have a dedicated server running the Management Server component. Any machine with the available resources can be used.

Additional features of the Management Server include:

- Polling the network for supported UPSs, CMCs, and System Agents (automatic discovery)
- Controlling security and authentication
 - Individual logon accounts
 - SSL implemented
- Generating status and configuration pages for authenticated users connecting through a Web browser
- Generating commands to send to the System Agents to prepare for, initiate, and cancel tasks
- Notifying administrators of alerts by way of e-mails, e-mail pages, and pop-up messages
- Sending alert traps to Insight Manager and other manageability software programs that receive SNMP traps

The Management Server operates on a single server that is running any of the following operating systems:

- Microsoft® Windows NT® 4.0 Server with Service Pack 6
- Microsoft Windows® 2000 Server with Service Pack 4
- Microsoft Windows 2000 Advanced Server with Service Pack 4
- Microsoft Windows 2003 Standard Server
- Microsoft Windows 2003 Enterprise Edition
- Red Hat Linux® 7.3 Server with Errata Kernel 2.4.20-18
- Red Hat Linux 8.0 Server with Errata Kernel 2.4.20-18
- Red Hat Enterprise Linux WS/ES/AS 2.1 with Errata Kernel 2.4.9-e.25
- UnitedLinux 1.0 with Errata Kernel sp2a

NOTE: Conectiva Linux Enterprise Edition, SCO Linux 4.0, SUSE Linux Enterprise 8, and Turbolinux 8 are all powered by UnitedLinux 1.0.

System Agent

The System Agent is the software component that runs on a server and allows HP Rack and Power Manager to gracefully shut down the operating system of that server or take another pre-configured action in case of a specific event.

IMPORTANT: Install the System Agent on any server that is attached to a UPS and on any server that HP Rack and Power Manager uses to initiate a command. For more information on using commands, refer to “Commands Tab” in Chapter 5.

A server that has the System Agent installed is discovered and recognized by HP Rack and Power Manager as an agent. Agents can be associated with one or more UPSs or UPS load segments. For more information on associating agents, refer to “Attached Agents Screen” in Chapter 5.

The System Agent operates on any network-connected server that is running one of the following operating systems:

- Microsoft Windows NT 4.0 Server with Service Pack 6
- Microsoft Windows 2000 Server with Service Pack 4
- Microsoft Windows 2000 Advanced Server with Service Pack 4
- Microsoft Windows 2003 Standard Server
- Microsoft Windows 2003 Enterprise Edition
- Novell NetWare 5.1 with Support Pack 6
- Novell NetWare 6.0 with Support Pack 3
- Red Hat Linux 7.3 Server with Errata Kernel 2.4.20-18
- Red Hat Linux 8.0 Server with Errata Kernel 2.4.20-18
- Red Hat Enterprise Linux WS/ES/AS 2.1 with Errata Kernel 2.4.9-e.25
- UnitedLinux 1.0 with Errata Kernel sp2a

NOTE: Conectiva Linux Enterprise Edition, SCO Linux 4.0, SUSE Linux Enterprise 8, and Turbolinux 8 are all powered by UnitedLinux 1.0.

Serial Relay Agent

The Serial Relay Agent is the software component that runs on a server and allows HP Rack and Power Manager to communicate with a UPS that is serially attached to a network-connected server. A server that has the Serial Relay Agent installed is discovered and recognized by HP Rack and Power Manager as a device with the IP address of the server running the Serial Relay Agent.

The Serial Relay Agent operates on any network-connected server that is serially attached to a UPS and running one the following operating systems:

- Microsoft Windows NT 4.0 Server with Service Pack 6
- Microsoft Windows 2000 Server with Service Pack 4
- Microsoft Windows 2000 Advanced Server with Service Pack 4
- Microsoft Windows 2003 Standard Server
- Microsoft Windows 2003 Enterprise Edition
- Novell NetWare 5.1 with Support Pack 6
- Novell NetWare 6.0 with Support Pack 3
- Red Hat Linux 7.3 Server with Errata Kernel 2.4.20-18
- Red Hat Linux 8.0 Server with Errata Kernel 2.4.20-18
- Red Hat Enterprise Linux WS/ES/AS 2.1 with Errata Kernel 2.4.9-e.25
- UnitedLinux 1.0 with Errata Kernel sp2a

NOTE: Conectiva Linux Enterprise Edition, SCO Linux 4.0, SUSE Linux Enterprise 8, and Turbolinux 8 are all powered by UnitedLinux 1.0.

Supported Hardware Configurations

HP Rack and Power Manager requires that the Management Server be connected to the network. UPSs and CMCs can be attached in any of the following configurations:

- Configuration A—A CMC is connected directly to the network.
- Configuration B—A UPS is serially attached to a server that is plugged into a load segment on the rear of the same UPS.
- Configuration C—A UPS and a server are both directly connected to the network. The server is plugged into a load segment on the rear of the UPS.
- Configuration D—UPSs are serially attached in a redundant configuration.
- Configuration E—UPSs are network attached in a redundant configuration.
- Configuration F—One UPS is serially attached and one UPS is network attached in a redundant configuration.
- Configuration G—A server that is not connected to a UPS is directly connected to the network and receives commands from the Management Server.

Configuration A

Figure 1-2 illustrates several CMCs connected directly to the network. The CMC is monitored by the Management Server, which is located elsewhere on the network.

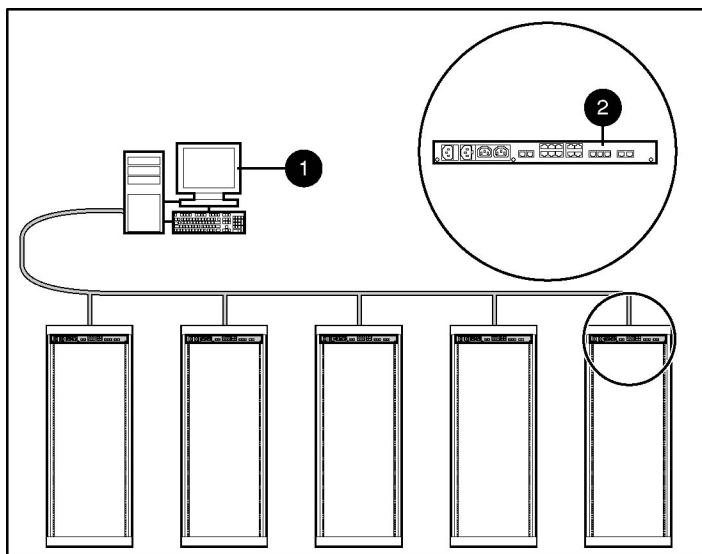


Figure 1-2: Configuration A

| Item | Description |
|------|--------------------------------------|
| 1 | HP Rack and Power Management Server* |
| 2 | CMC |

*A dedicated Management Server is not required.

Configuration B

Figure 1-3 illustrates a UPS serially attached to a server that is plugged into a load segment of the UPS. The server is connected directly to the network. A Management Server is located elsewhere on the network. The server has an installed System Agent that receives commands, such as displaying a pop-up message or shutting down the operating system, from the Management Server. The server also has an installed Serial Relay Agent that is used for communication between the UPS and the Management Server.

NOTE: Installed agents must be associated with the correct server or UPS load segment in HP Rack and Power Manager. For information on associating agents, refer to “Attached Agents Screen” in Chapter 5.

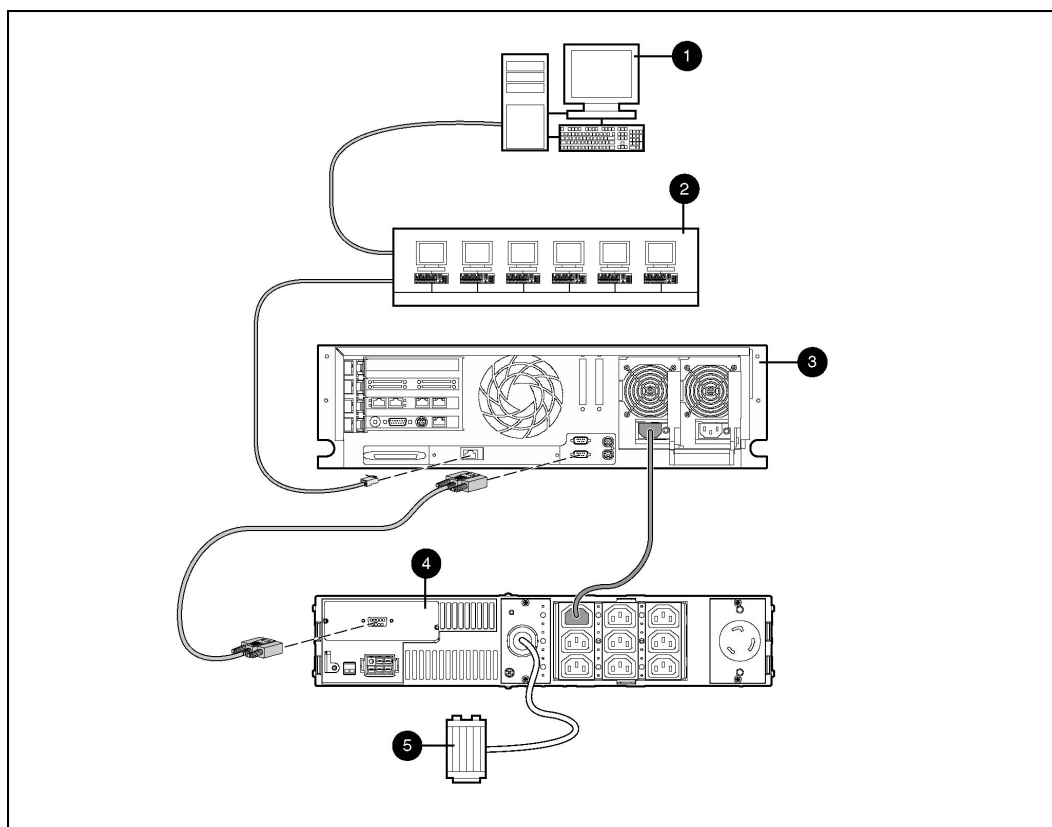


Figure 1-3: Configuration B

| Item | Description |
|---|--|
| 1 | HP Rack and Power Management Server* |
| 2 | Additional servers power protected by a single UPS (each server requires installation of the System Agent) |
| 3 | Power protected server that is serially attached to the UPS (requires installation of the System Agent and the Serial Relay Agent) |
| 4 | UPS with a serial communication cable attached |
| 5 | Utility power feed |
| *A dedicated Management Server is not required. | |

Configuration C

Figure 1-4 illustrates a server that is plugged into a load segment of a UPS. Both the UPS and the server are directly connected to the network. The UPS is monitored by a Management Server that is located elsewhere on the network. The server has an installed System Agent that receives commands, such as displaying a pop-up message or shutting down the operating system, from the Management Server.

NOTE: Installed agents must be associated with the correct server or UPS load segment in HP Rack and Power Manager. For information on associating agents, refer to “Attached Agents Screen” in Chapter 5.

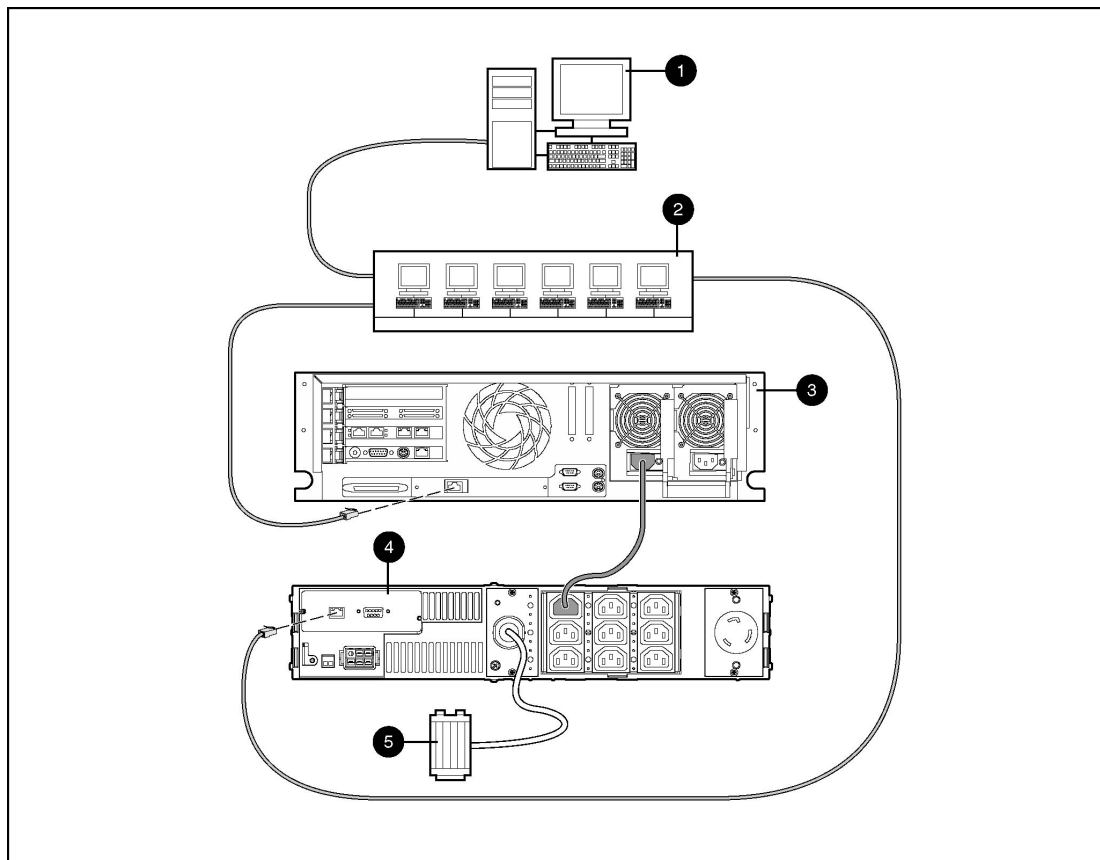


Figure 1-4: Configuration C

| Item | Description |
|---|--|
| 1 | HP Rack and Power Management Server* |
| 2 | Additional servers power protected by a single UPS (each server requires installation of the System Agent) |
| 3 | Power protected server (requires installation of the System Agent) |
| 4 | UPS with an HP SNMP Adapter Card installed |
| 5 | Utility power feed |
| *A dedicated Management Server is not required. | |

Configuration D

Figure 1-5 illustrates a redundant configuration in which servers with dual power supplies are protected by multiple UPSs. The servers are both serially attached to different UPSs. One server power supply is connected to a receptacle on the rear panel of each UPS. Each UPS is connected to a separate power feed. The UPSs are monitored by a Management Server located elsewhere on the network. Each server has an installed System Agent that receives commands, such as displaying a pop-up message or shutting down the operating system, from the Management Server. The servers also each have an installed Serial Relay Agent that is used for communication between the UPS and the Management Server.

IMPORTANT: When planning a redundant configuration, consider that in normal operating conditions, servers with multiple power supplies equally distribute the power load across each power feed. A server with two power supplies applies 50% of the load to each power feed. In the event that one power feed fails, the second power feed must be able to handle 100% of the load. Ensure that each UPS in the redundant configuration can support the entire load in the event of a power failure.

Redundant UPS configurations should be tested thoroughly to ensure the load handling capabilities and power fail settings of each UPS before an actual power failure event.

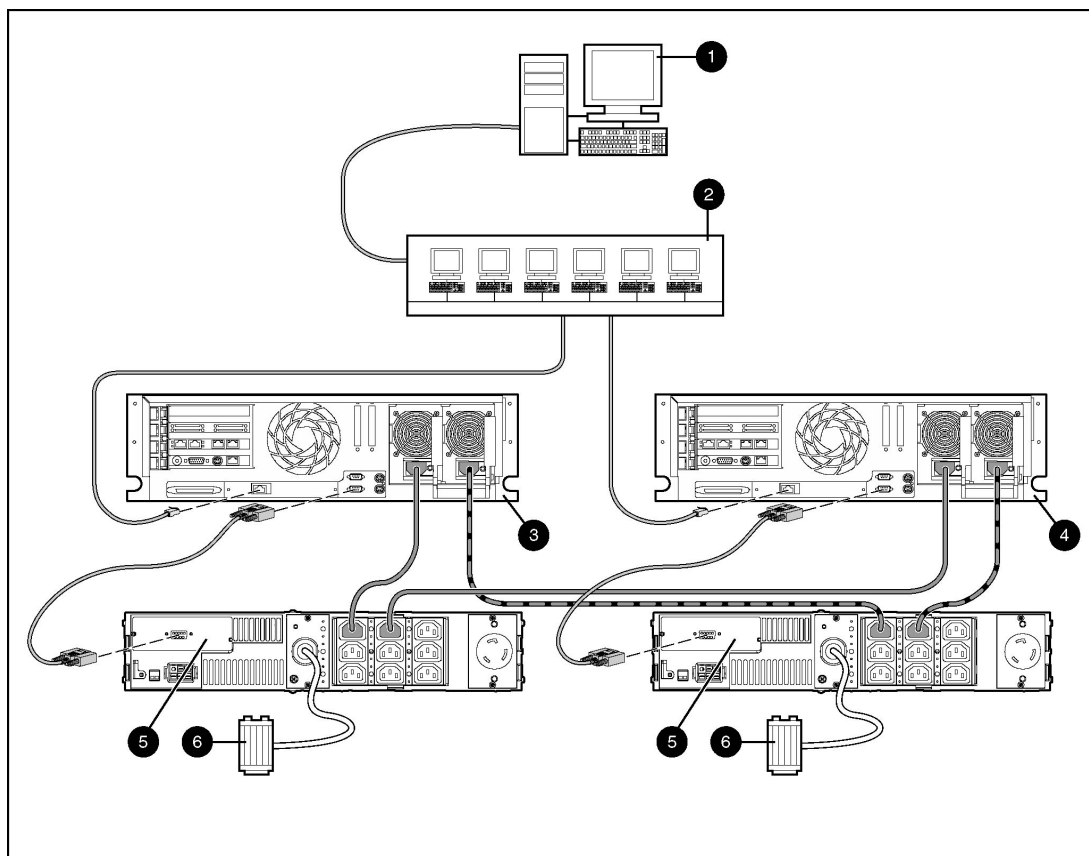


Figure 1-5: Configuration D

| Item | Description |
|------|--|
| 1 | HP Rack and Power Management Server* |
| 2 | Additional servers power protected by multiple UPSs (each server requires installation of the System Agent) |
| 3 | Redundant power protected server that is serially attached to the UPS (requires installation of the System Agent and the Serial Relay Agent) |
| 4 | Redundant power protected server that is serially attached to the UPS (requires installation of the System Agent and the Serial Relay Agent) |
| 5 | UPS with a serial communication cable attached |
| 6 | Utility power feed |

*A dedicated Management Server is not required.

Configuration E

Figure 1-6 illustrates a redundant configuration in which one server with dual power supplies is protected by multiple UPSs. One server power supply is connected to a receptacle on the rear panel of each UPS. Each UPS is connected to a separate power feed. The UPSs are monitored by a Management Server located elsewhere on the network. Each server has an installed System Agent that receives commands, such as displaying a pop-up message or shutting down the operating system, from the Management Server.

IMPORTANT: When planning a redundant configuration, consider that in normal operating conditions, servers with multiple power supplies equally distribute the power load across each power feed. A server with two power supplies applies 50% of the load to each power feed. In the event that one power feed fails, the second power feed must be able to handle 100% of the load. Ensure that each UPS in the redundant configuration can support the entire load in the event of a power failure.

Redundant UPS configurations should be tested thoroughly to ensure the load handling capabilities and power fail settings of each UPS before an actual power failure event.

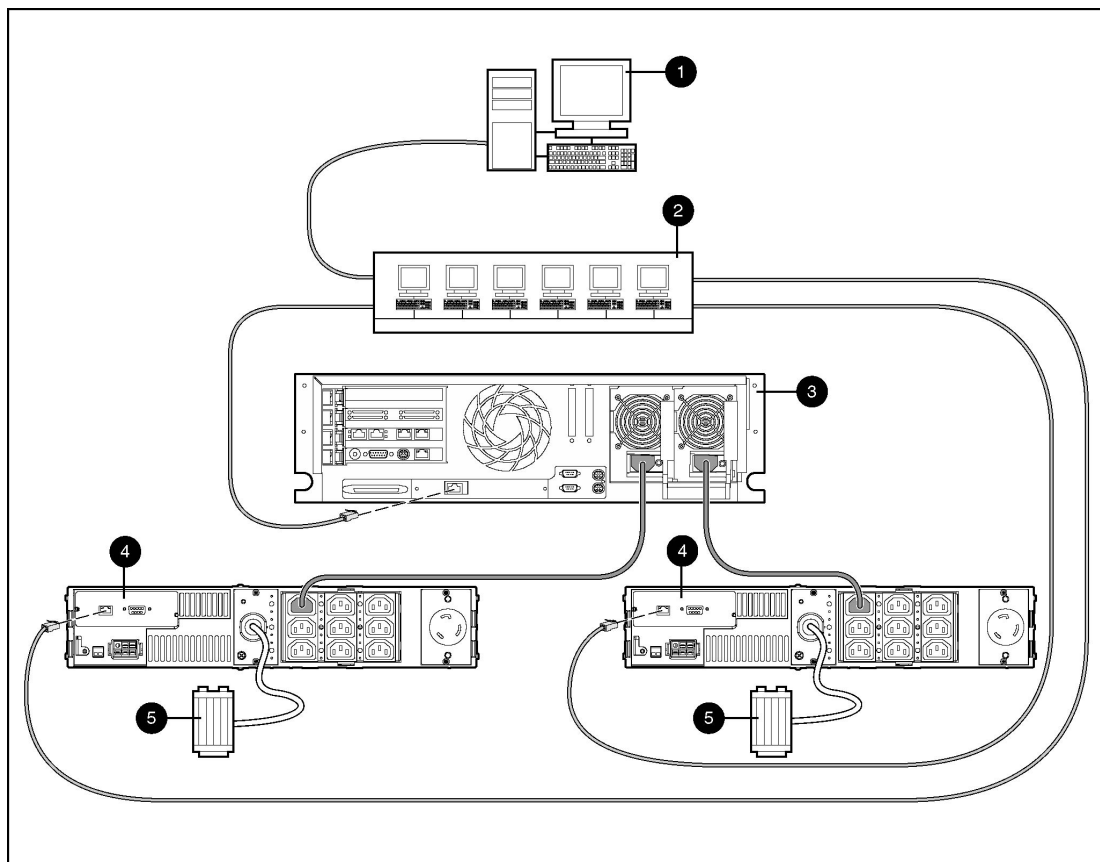


Figure 1-6: Configuration E

| Item | Description |
|------|---|
| 1 | HP Rack and Power Management Server* |
| 2 | Additional servers power protected by multiple UPSs (each server requires installation of the System Agent) |
| 3 | Redundant power protected server (requires installation of the System Agent) |
| 4 | UPS with an HP SNMP Adapter Card installed |
| 5 | Utility power feed |

*A dedicated Management Server is not required.

Configuration F

Figure 1-7 illustrates a redundant configuration in which servers with dual power supplies are protected by multiple UPSs. One server is serially attached to a UPS. The first server and a second UPS are connected directly to the network. One server power supply is connected to a receptacle on the rear panel of each UPS. Each UPS is connected to a separate power feed. The UPSs are monitored by a Management Server located elsewhere on the network.

IMPORTANT: When planning a redundant configuration, consider that in normal operating conditions, servers with multiple power supplies equally distribute the power load across each power feed. A server with two power supplies applies 50% of the load to each power feed. In the event that one power feed fails, the second power feed must be able to handle 100% of the load. Ensure that each UPS in the redundant configuration can support the entire load in the event of a power failure.

Redundant UPS configurations should be tested thoroughly to ensure the load handling capabilities and power fail settings of each UPS before an actual power failure event.

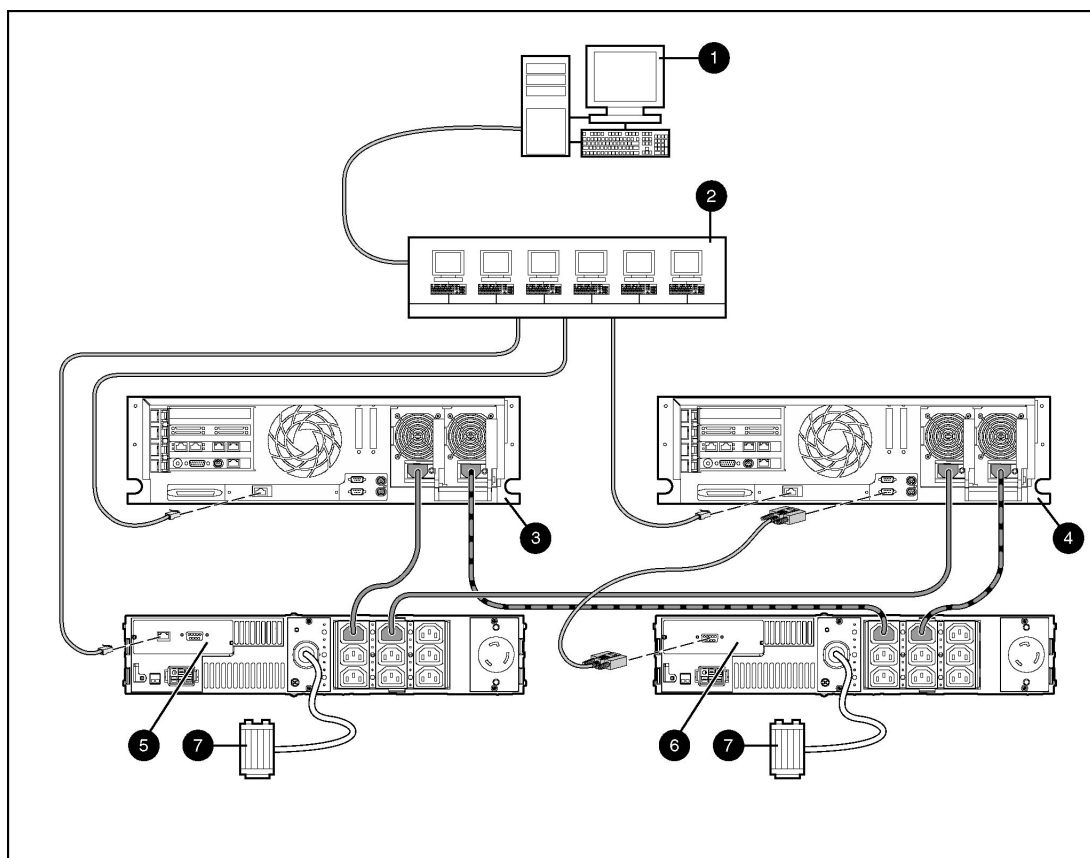


Figure 1-7: Configuration F

| Item | Description |
|------|--|
| 1 | HP Rack and Power Management Server* |
| 2 | Additional servers power protected by multiple UPSs (each server requires installation of the System Agent) |
| 3 | Redundant power protected server (requires installation of the System Agent) |
| 4 | Redundant power protected server that is serially attached to the UPS (requires installation of the System Agent and the Serial Relay Agent) |
| 5 | UPS with an HP SNMP Adapter Card installed |
| 6 | UPS with a serial communication cable attached |
| 7 | Utility power feed |

*A dedicated Management Server is not required.

Configuration G

Figure 1-8 illustrates a server that is not connected to a UPS but is directly connected to the network. The server has an installed System Agent that receives commands, such as displaying a pop-up message or shutting down the operating system, from the Management Server.

NOTE: Installed agents must be associated with the correct server or UPS load segment in HP Rack and Power Manager. For information on associating agents, refer to “Attached Agents Screen” in Chapter 5.

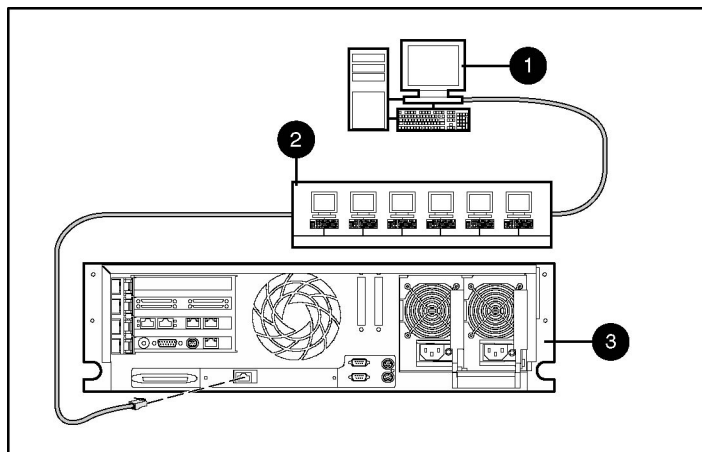


Figure 1-8: Configuration G

| Item | Description |
|------|--|
| 1 | HP Rack and Power Management Server* |
| 2 | Additional non-power protected servers (each server requires installation of the System Agent) |
| 3 | Non-power protected server (requires installation of the System Agent) |

*A dedicated Management Server is not required.

Power Protection for the Rack and Power Management Server

Power protection for the Management Server is essential. The Management Server is the central point of control of the Rack and Power Management environment. If the Management Server goes down, control of all managed devices is lost. Supported power protection configurations for the Management Server are detailed in Table 1-1.

Table 1-1: Management Server Power Protection Configurations

| Number of UPSs | UPS Connections | Components Required on Management Server |
|--|--|---|
| Single | UPS serially attached to the Management Server | <ul style="list-style-type: none"> • HP Rack and Power Manager • System Agent • Serial Relay Agent |
| Single | Network connected | <ul style="list-style-type: none"> • HP Rack and Power Manager • System Agent |
| Redundant | Both UPSs network connected | <ul style="list-style-type: none"> • HP Rack and Power Manager • System Agent |
| Redundant | Both UPSs serially attached* | <ul style="list-style-type: none"> • HP Rack and Power Manager • System Agent • Serial Relay Agent |
| Redundant | One UPS serially attached, one UPS network connected | <ul style="list-style-type: none"> • HP Rack and Power Manager • System Agent • Serial Relay Agent |
| * If this configuration is used, the serial communications cable from the second UPS must be connected to a separate server. | | |

System Requirements

IMPORTANT: Verify that the system meets the system requirements before installing HP Rack and Power Manager.

Table 2-1: Management Server System Requirements

| Hardware and Software | Suggested Minimum Requirements |
|-----------------------|---|
| Hardware | 500-MHz Intel® Pentium® computer |
| Disk space | 100 MB |
| System memory | 256 MB of RAM |
| Operating system | <ul style="list-style-type: none"> • Microsoft Windows NT 4.0 Server with Service Pack 6 • Microsoft Windows 2000 Server with Service Pack 4 • Microsoft Windows 2000 Advanced Server with Service Pack 4 • Microsoft Windows 2003 Standard Server • Microsoft Windows 2003 Enterprise Edition • Red Hat Linux 7.3 Server with Errata Kernel 2.4.20-18¹ • Red Hat Linux 8.0 Server with Errata Kernel 2.4.20-18¹ • Red Hat Enterprise Linux WS/ES/AS 2.1 with Errata Kernel 2.4.9-e.25¹ • UnitedLinux 1.0 with Errata Kernel sp2a^{1,2} |
| Server software | <ul style="list-style-type: none"> • A supported operating system with a static IP address (recommended), TCP/IP installed and configured • SNMP services installed and active • A mail application program with SMTP for e-mail notification of alerts |

¹ Linux servers running the Management Server component require XWindows with a supported GUI and the compatible library `compat-libstdc++-x.x.x.rpm`, which is usually available from the operating system media.

² Conectiva Linux Enterprise Edition, SCO Linux 4.0, SUSE Linux Enterprise 8, and Turbolinux 8 are all powered by UnitedLinux 1.0.

Table 2-2: System Agent System Requirements

| Hardware and Software | Suggested Minimum Requirements |
|-----------------------|---|
| Hardware | 233-MHz Pentium computer |
| Disk space | 10 MB free disk space |
| System memory | 64 MB of RAM |
| Operating system | <ul style="list-style-type: none"> • Microsoft Windows NT 4.0 Server with Service Pack 6 • Microsoft Windows 2000 Server with Service Pack 4 • Microsoft Windows 2000 Advanced Server with Service Pack 4 • Microsoft Windows 2003 Standard Server • Microsoft Windows 2003 Enterprise Edition • Novell NetWare 5.1 with Support Pack 6 • Novell NetWare 6.0 with Support Pack 3 • Red Hat Linux 7.3 Server with Errata Kernel 2.4.20-18¹ • Red Hat Linux 8.0 Server with Errata Kernel 2.4.20-18¹ • Red Hat Enterprise Linux WS/ES/AS 2.1 with Errata Kernel 2.4.9-e.25¹ • UnitedLinux 1.0 with Errata Kernel sp2a^{1,2} |
| Network | Static IP Address |

¹ Linux servers running the Management Server component require XWindows with a supported GUI and the compatible library `compat-libstdc++-x.x.x.rpm`, which is usually available from the operating system media.

² Conectiva Linux Enterprise Edition, SCO Linux 4.0, SUSE Linux Enterprise 8, and Turbolinux 8 are all powered by UnitedLinux 1.0.

Table 2-3: Serial Relay Agent System Requirements

| Hardware and Software | Suggested Minimum Requirements |
|-----------------------|---|
| Hardware | 233-MHz Pentium computer |
| Disk space | 10 MB free disk space |
| System memory | 64 MB of RAM |
| Operating system | <ul style="list-style-type: none"> • Microsoft Windows NT 4.0 Server with Service Pack 6 • Microsoft Windows 2000 Server with Service Pack 4 • Microsoft Windows 2000 Advanced Server with Service Pack 4 • Microsoft Windows 2003 Standard Server • Microsoft Windows 2003 Enterprise Edition • Novell NetWare 5.1 with Support Pack 6 • Novell NetWare 6.0 with Support Pack 3 • Red Hat Linux 7.3 Server with Errata Kernel 2.4.20-18¹ • Red Hat Linux 8.0 Server with Errata Kernel 2.4.20-18¹ • Red Hat Enterprise Linux WS/ES/AS 2.1 with Errata Kernel 2.4.9-e.25¹ • UnitedLinux 1.0 with Errata Kernel sp2a^{1,2} |

¹ Linux servers running the Management Server component require XWindows with a supported GUI and the compatible library `compat-libstdc++-x.x.x.rpm`, which is usually available from the operating system media.

² Conectiva Linux Enterprise Edition, SCO Linux 4.0, SUSE Linux Enterprise 8, and Turbolinux 8 are all powered by UnitedLinux 1.0.

Browser Requirements

Table 2-4 lists the minimum HP Rack and Power Manager browser requirements.

Table 2-4: Minimum Web Browser Requirements

| Software | Browser |
|---|---|
| Web browser on a client | <p>Windows:</p> <ul style="list-style-type: none"> Microsoft Internet Explorer 6.0 or later Sun Java™ Plug-in 1.4.2_02 (recommended)¹ <p>Linux:</p> <ul style="list-style-type: none"> Mozilla 1.4 or later Sun Java Plug-in 1.4.2_02 (recommended)² The <code>libgcc 3.x.x</code> package |
| Monitor resolution | Minimum supported resolution of 1024 x 768, 16-bit high color (maximize browser window for optimal display) |
| <p>¹ A Java Plug-in installation occurs immediately upon browsing to HP Rack and Power Manager for the first time. Verify that the recommended Java Plug-in is installed.</p> <p>² The Java Plug-in must be manually installed and a link must be created between the plug-in and the Mozilla browser. The plug-in is included in the install directory in the Web/Plugin folder.</p> | |

Installation Overview

Follow these guidelines when installing the HP Rack and Power Manager components:

- **Management Server**—Install the Management Server on the computer that will be responsible for managing other systems and devices.

IMPORTANT: Devices should be managed by a single Management Server.
- **System Agent**—Install the System Agent on any computer that will control the shutdown and restart of a UPS load segment or receive commands from the Management Server.
- **Serial Relay Agent**—Install the Serial Relay Agent on any computer that is serially attached to a UPS.

For each component of HP Rack and Power Manager, two installation options exist:

- **Graphical user interface (GUI) installation**—A series of dialog boxes and prompts guide you through the installation process.
- **Silent installation**—A text form is filled out, and the installation program completes the installation.

Table 2-5 summarizes the available installation options for each operating system.

Table 2-5: Installation Options

| Operating System | GUI Installation | Silent Installation* |
|---|------------------|----------------------|
| Microsoft Windows NT 4.0 Server | Available | Available |
| Microsoft Windows 2000 Server | Available | Available |
| Microsoft Windows 2000 Advanced Server | Available | Available |
| Microsoft Windows 2003 Standard Server | Available | Available |
| Microsoft Windows 2003 Enterprise Edition | Available | Available |
| Novell NetWare 5.1 | Available** | Available |
| Novell NetWare 6.0 | Available** | Available |
| Red Hat Linux 7.3 Server | Available | Available |
| Red Hat Linux 8.0 Server | Available | Available |
| Red Hat Enterprise Linux WS/ES/AS 2.1 | Available | Available |
| UnitedLinux 1.0 | Available | Available |
| * The Silent installation option only installs agents. Install the Management Server using the GUI installation method. | | |
| ** Installation must be run from a Windows workstation connected to the NetWare server. | | |

Installing Components on Windows Operating Systems

The Management Server, System Agent, and Serial Relay Agent can be installed using the GUI installation method on any supported Windows operating system.

NOTE: HP Rack and Power Manager components can be installed individually or as a group using the GUI installation method.

The System Agent and Serial Relay Agent can be installed using the Silent installation option on any supported Windows operating system.

Installing the Components Using the GUI Installation Method

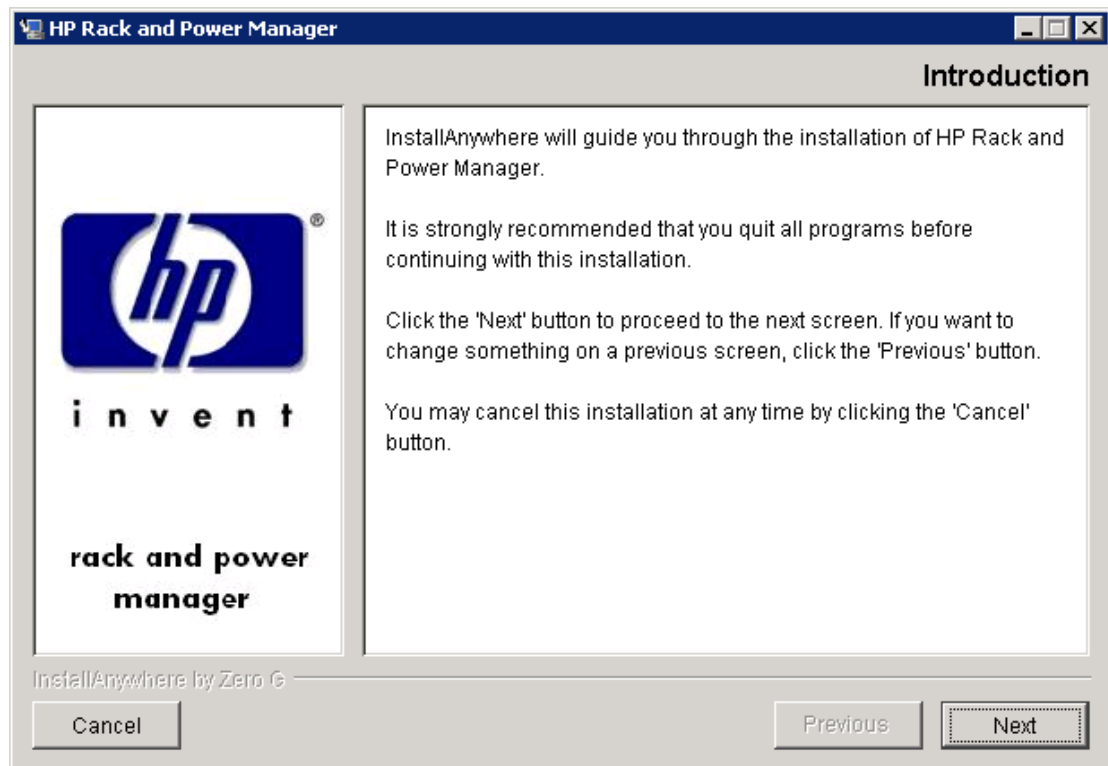
To install the software on a Windows system using the GUI installation method:

1. Insert the Rack and Power Management Pack CD into the CD-ROM drive of the computer. If the AutoPlay feature is enabled, the installation menu automatically starts.

If the AutoPlay feature is disabled, explore the CD, and double-click `SETUP.EXE` in the `HP RPM/Windows` folder.

If the operating system running is Japanese, the Language screen appears. Select the installation language, and click **Next**. The Introduction screen appears.

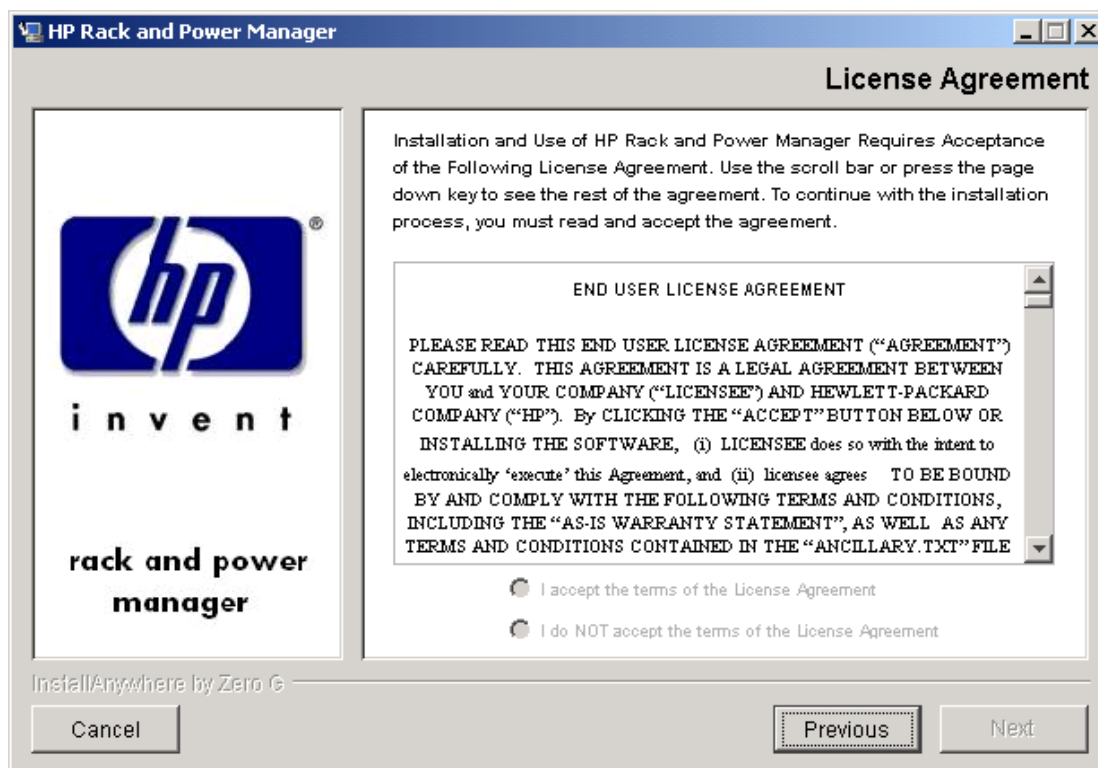
2. Read the introduction, and click **Next**.



The License Agreement screen appears.

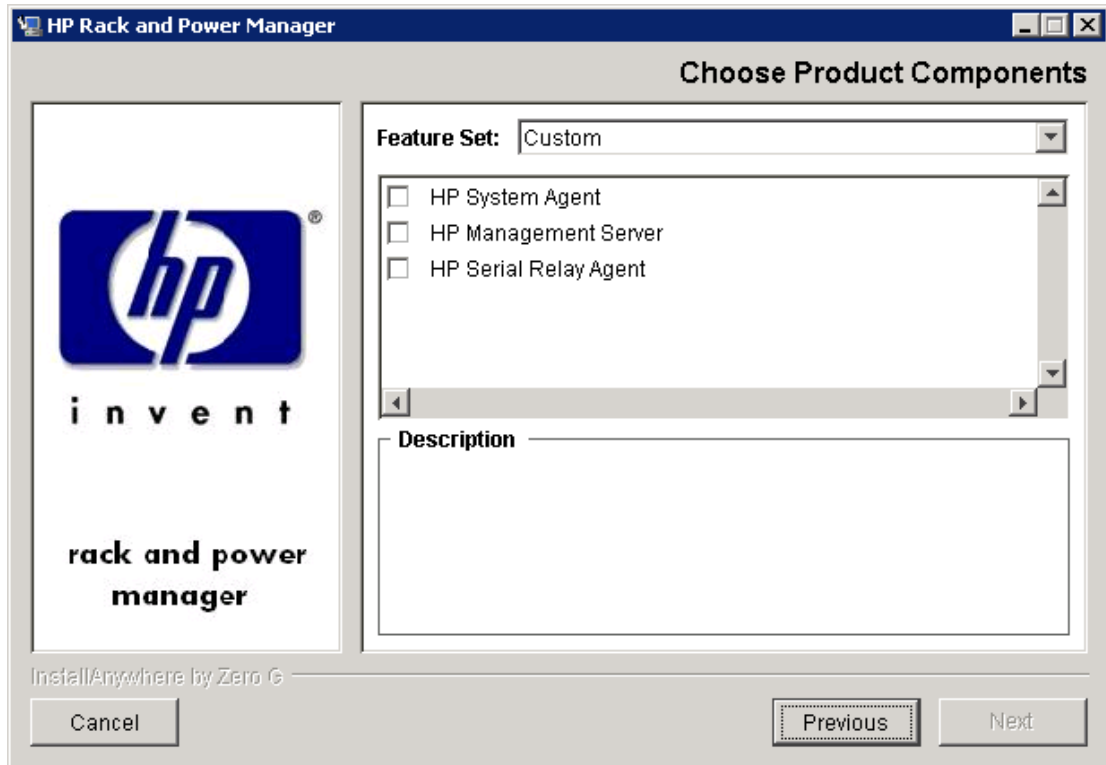
3. Read the license agreement, select **I accept the terms of the License Agreement**, and click **Next**.

NOTE: The radio buttons are inactive until you scroll down to the bottom of the license agreement.



The Choose Product Components screen appears.

4. Select the component you want to install, and click **Next**.

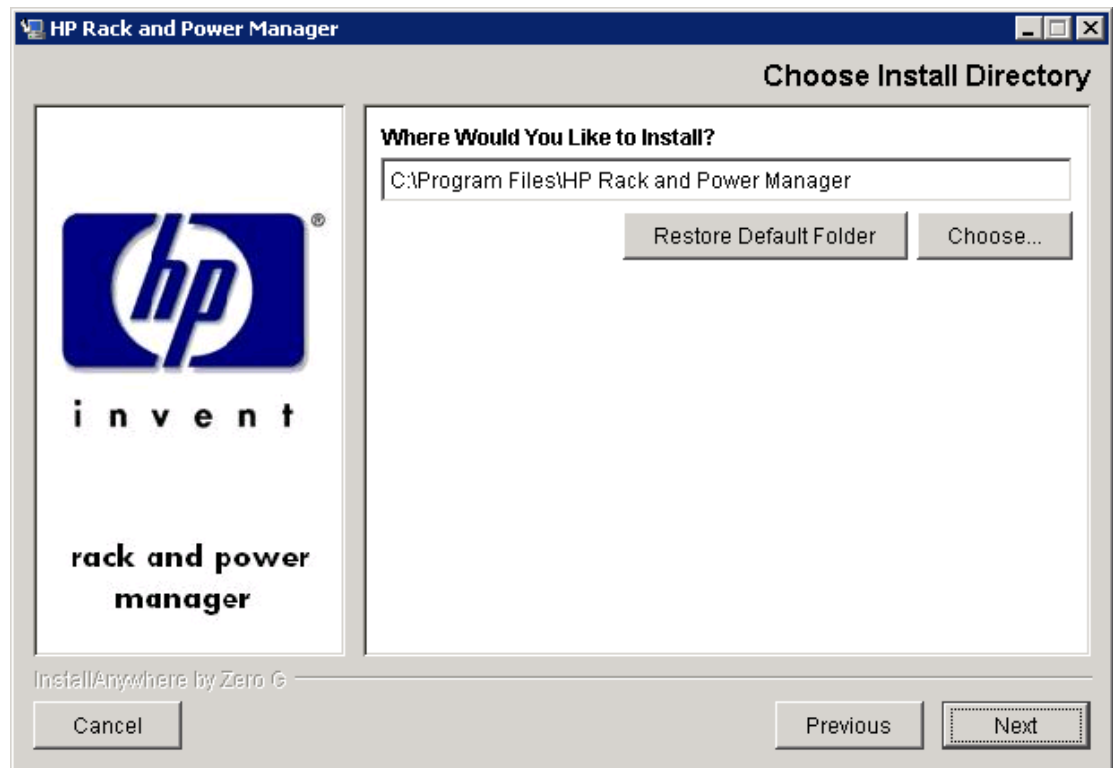


NOTE: Multiple components can be installed at one time. Available components include:

- **HP Management Server**—Install the Management Server on the computer that will be responsible for managing other systems and devices.
- **HP System Agent**—Install the System Agent on any computer that will control the shutdown and restart of a UPS load segment or receive commands from the Management Server.
- **HP Serial Relay Agent**—Install the Serial Relay Agent on any computer that is serially attached to a UPS.

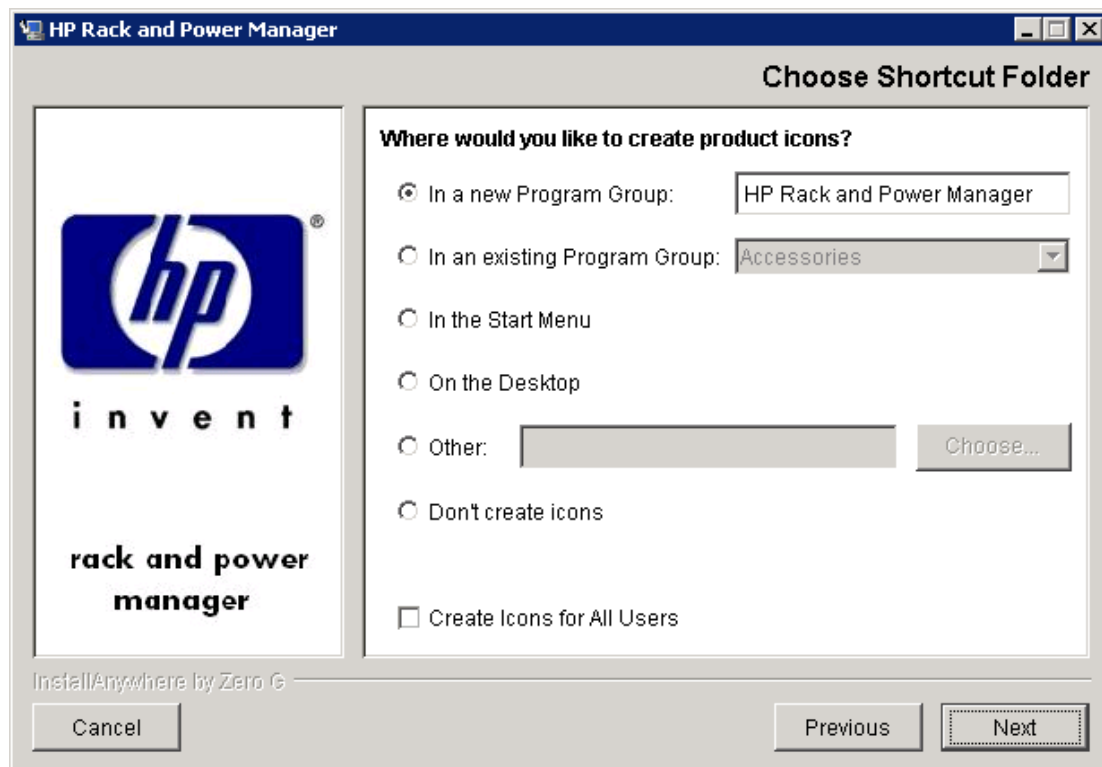
The Choose Install Directory screen appears.

5. Click **Next** to install the components in the default folder that is displayed in the Where Would You Like to Install? field. To specify a different folder, click **Choose**, navigate to the appropriate folder, and click **Next**.



The Choose Shortcut Folder screen appears.

6. Select the appropriate radio button to create product icons for HP Rack and Power Manager:
 - Program Group—Click **Start**, select **Programs**, and select the **HP Rack and Power Manager Program Group**. Click **HP Rack and Power Manager** to launch the software.
 - Start Menu—Click **Start**, and select **HP Rack and Power Manager** to launch the software.
 - Desktop Icon—Double-click the **HP Rack and Power Manager** icon on the desktop to launch the software.
 - Other—Double-click the **HP Rack and Power Manager** link located in a specified folder on the hard drive to launch the software.
7. Select **Create Icons for All Users** to display the desktop icon for any user logged in to the computer. Click **Next**.



8. If you are installing the Management Server, enter the password for the first administrator in the Enter Password field. Confirm the password by reentering the password in the Confirm Password field. Additional administrator accounts and passwords can be set up on the HP Rack and Power Manager User Administration screen. For more information on adding accounts, refer to “User Administration Screen” in Chapter 4.

Click **Next**.

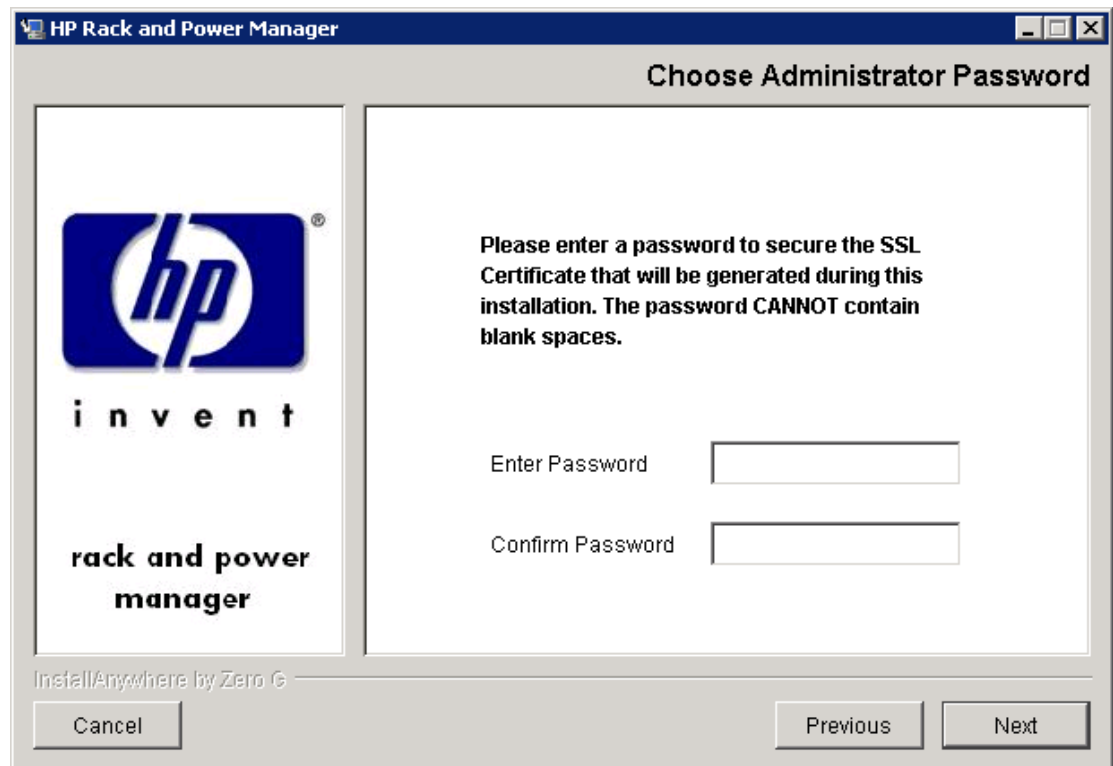
The screenshot shows a Windows-style window titled "HP Rack and Power Manager" with a subtitle "Choose Administrator Password". On the left side, there is a logo consisting of the HP logo above the word "invent" and "rack and power manager" below it. The main area on the right contains the following text: "Please enter a password for the Administrative user account." followed by "The default Administrative User Name is ('admin')." Below this, there are two input fields: "Enter Password" and "Confirm Password". At the bottom of the window, there is a status bar that says "InstallAnywhere by Zero G". Below this bar are three buttons: "Cancel", "Previous", and "Next".

9. If you are installing the Management Server, enter the password needed to allow HP Rack and Power Manager to communicate with the database in the Enter Password field. Confirm the password by reentering the password in the Confirm Password field. The database password can be changed after installation is complete on the HP Rack and Power Manager Database screen. For more information on changing the database password, refer to “Database Screen” in Chapter 4.

Click **Next**.

The screenshot shows a Windows-style dialog box titled "HP Rack and Power Manager" with a subtitle "Choose Administrator Password". On the left side, there is a logo consisting of the HP logo above the word "invent" and "rack and power manager" below it. The main area of the dialog contains the following text: "Please enter a password for securing data access between the RPM application and its database." and "Please note the database password you enter, it may need to be referenced in the future." Below this text are two input fields: "Enter Password" and "Confirm Password". At the bottom of the dialog, there are three buttons: "Cancel", "Previous", and "Next". The "Next" button is highlighted, indicating it is the recommended action.

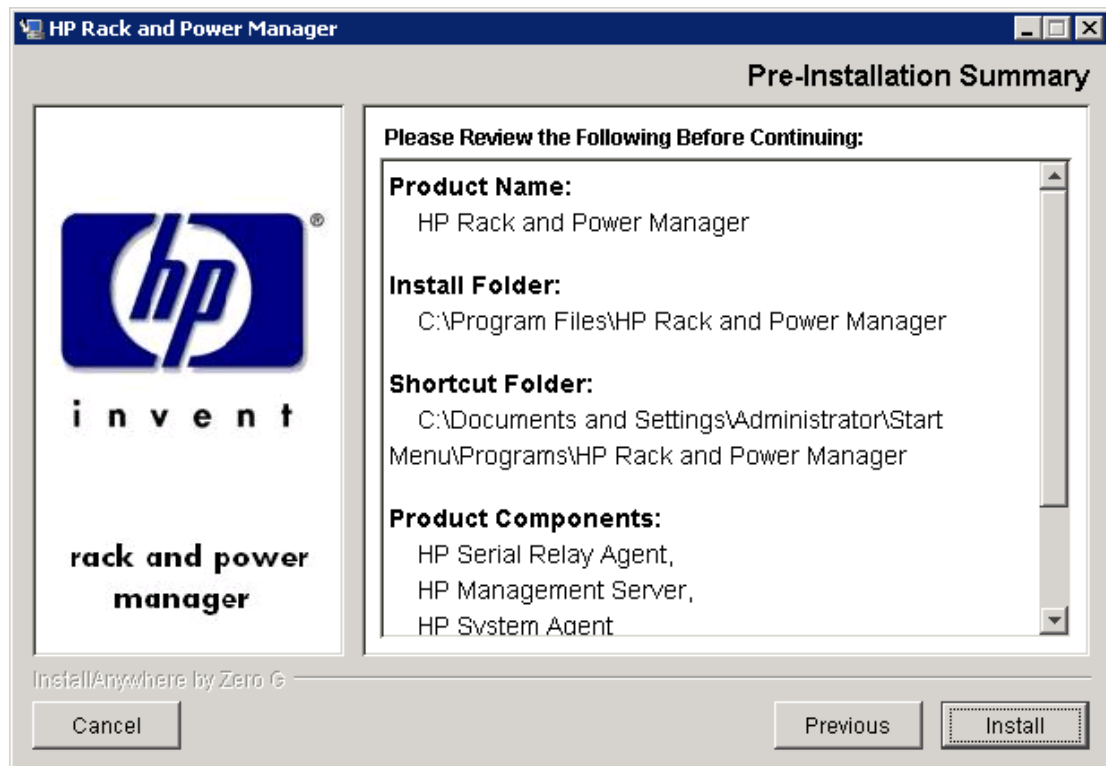
10. If you are installing the Management Server or the System Agent, enter and confirm a password to secure the SSL certificate. The password cannot contain blank spaces. Click **Next**.



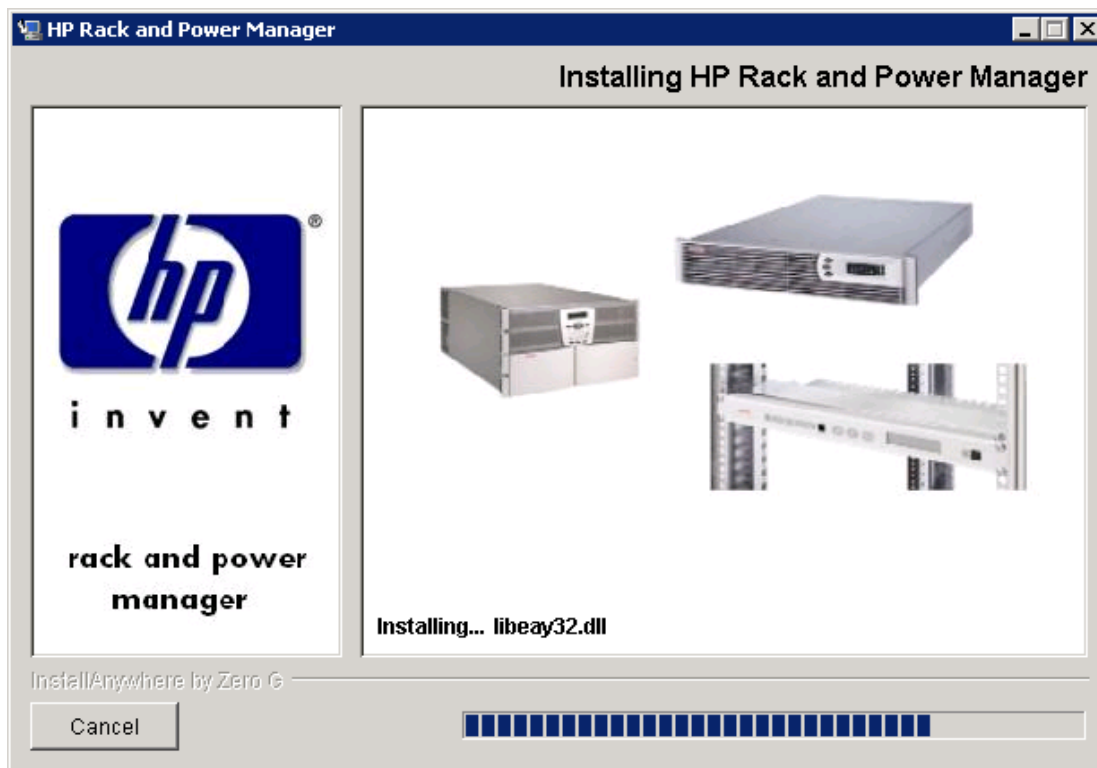
The image shows a Windows-style dialog box titled "HP Rack and Power Manager" with a subtitle "Choose Administrator Password". On the left side, there is a logo consisting of the "hp" logo above the word "invent" and "rack and power manager" below it. The main area on the right contains the text: "Please enter a password to secure the SSL Certificate that will be generated during this installation. The password CANNOT contain blank spaces." Below this text are two input fields: "Enter Password" and "Confirm Password". At the bottom of the dialog, there are three buttons: "Cancel", "Previous", and "Next". The "Previous" and "Next" buttons are disabled.

The Pre-Installation Summary screen appears.

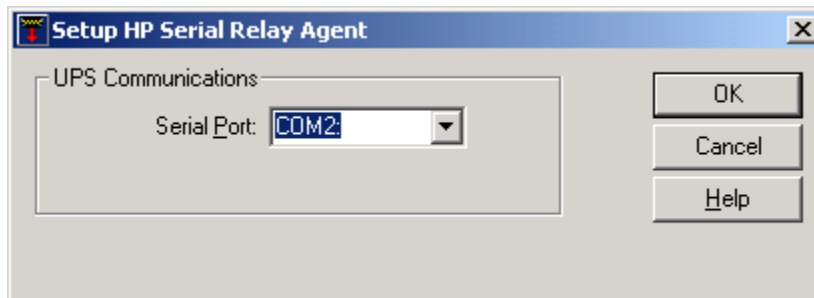
11. Review the installation information, and click **Install**.



The Installing HP Rack and Power Manager screen appears. The components install, and a status bar indicates the installation progress.



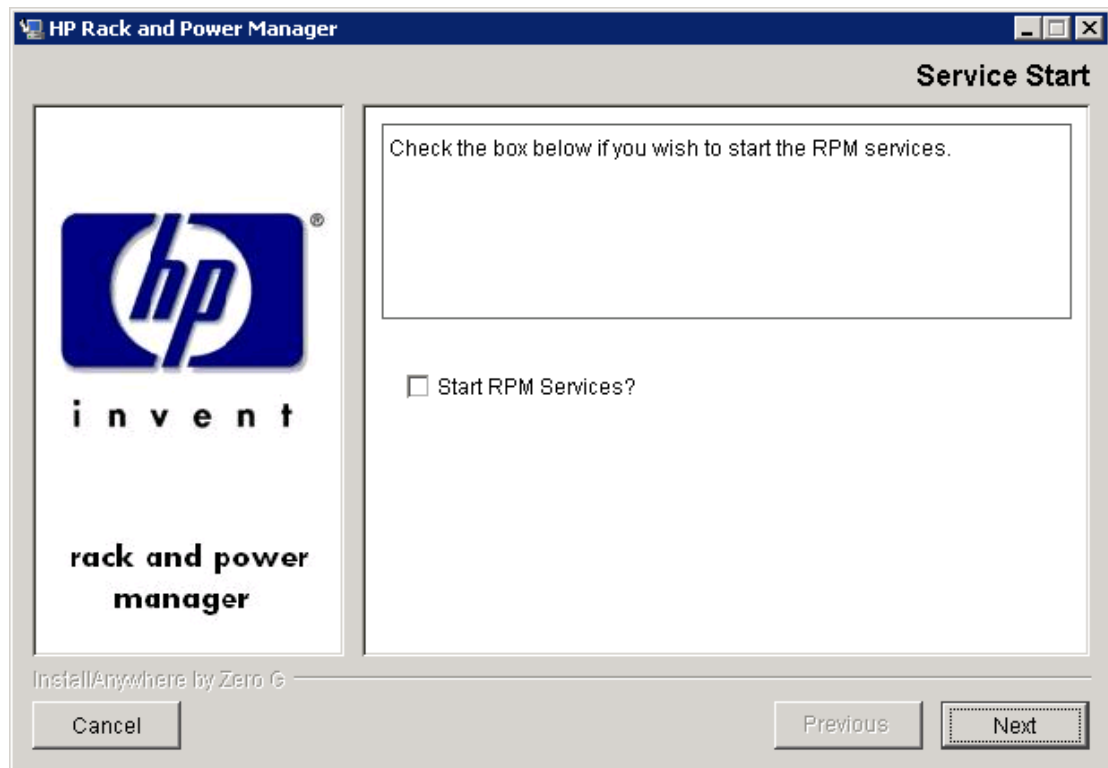
12. If you are installing the Serial Relay Agent, the Setup HP Serial Relay Agent dialog box appears. Select the COM port on the computer to which the UPS is attached in the Serial Port dropdown box, then click **OK**.



A message appears, asking to start the Serial Relay Agent. Click **Yes**. The installation program attempts to communicate with the UPS. After communication is established, the Service Start screen appears.

NOTE: If the Serial Relay Agent fails to communicate with the UPS, refer to Chapter 6, "Troubleshooting."

13. Select **Start RPM Services?** and click **Next**.



The Install Complete screen appears.

14. Read the information, and click **Done**.



Installing the System Agent and Serial Relay Agent Using the Silent Installation Method

The System Agent and Serial Relay Agent can be installed using the Silent installation option on any supported Windows operating system.

To install using the Silent installation option, a properties file must be created using a text editor with the appropriate variables set for the desired installation options. An example of the properties file is located on the HP Rack and Power Management Pack CD in the HPRPM/Windows folder.

A description of the variables used on the properties file is included in Table 2-6. Examples of the properties file follow.

Table 2-6: Complete List of Variables

| Variable | Function |
|---|--|
| INSTALLER_UI {should be equal to silent} | Use this variable to indicate the install type. |
| CHOSEN_INSTALL_SET {agent, SRA, agentSRA} | Use this variable to select which agent component to install. <ul style="list-style-type: none"> • Use agent to install the System Agent. • Use SRA to install the Serial Relay Agent. • Use agent.SRA to install both the System Agent and Serial Relay Agent. |
| USER_INSTALL_DIR {Divisions in the file structure between directories should be indicated with the symbol '\$/\$'. Example: C:/\$/hprpm} | Use this variable to indicate the path to which the agent component is to be installed. |
| USER_INPUT_CERT_PW_1 {password needed if CHOSEN_INSTALL_SET = agent or CHOSEN_INSTALL_SET = agentSRA; should be equal to USER_INPUT_CERT_PW_2} | Use this variable to input the SSL certificate password that will be generated during the install. |
| USER_INPUT_SRA_COM {Communications Port Number the UPS is connected to, needed if CHOSEN_INSTALL_SET = SRA or CHOSEN_INSTALL_SET = agentSRA} | Use this variable to input the COM port number to which the UPS is connected. |
| USER_INPUT_RESULTS_START_1 {this variable is needed to start the services installed; it should be equal to Start RPM Services?} | Use this variable to start the HP Rack and Power Manager service. |

Example 2-1: Silent System Agent Installation

```

INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agent
USER_INSTALL_DIR = c:/$/Program Files$/HPRPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_RESULTS_START_1 = Start RPM Services?

```

Example 2-2: Silent System Agent and Serial Relay Agent Installation

```

INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agentSRA
USER_INSTALL_DIR = c:/$Program Files$/HP$/SRPM
INSTALL_AGENT = true
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_SRA_COM = 2
USER_INPUT_RESULTS_START_1 = Start CRPM Services?

```

After saving the text file, run the installer by entering *<path to install executable> -f <path to properties file>* at the command prompt. For example, if the install executable (SETUP.EXE) is in the directory `c:/hprpm` and the properties file (INSTALL.PROP) is in the directory `c:/docs`, from a command prompt at `c:/hprpm`, enter:

```
SETUP.EXE -f C:/DOCS/INSTALL.PROP
```

Installing Components on Linux Operating Systems

The Management Server, System Agent, and Serial Relay Agent can be installed using the GUI installation option on any supported Linux operating system.

NOTE: HP Rack and Power Manager components can be installed individually or as a group using the GUI installation method.

The System Agent and Serial Relay Agent can be installed using the Silent installation option on any supported Linux operating system.

Installing the Components Using the GUI Installation Method

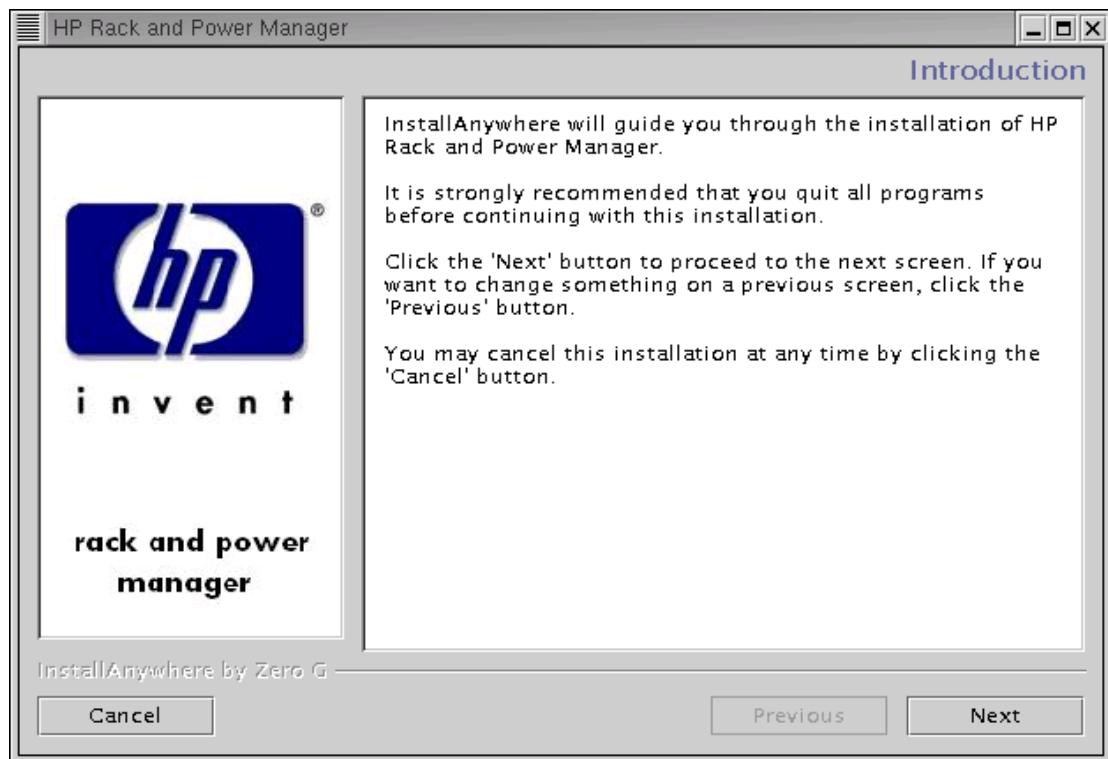
To install the components on a Linux system using the GUI installation method:

1. Insert the Rack and Power Management Pack CD into the CD-ROM drive of the computer.

Mount the CD and locate and run the Linux executable file located in the HPRPM/Linux folder (INSTALL.BIN).

If the operating system running is Japanese, the Language screen appears. Select the installation language and click **Next**. The Introduction screen appears.

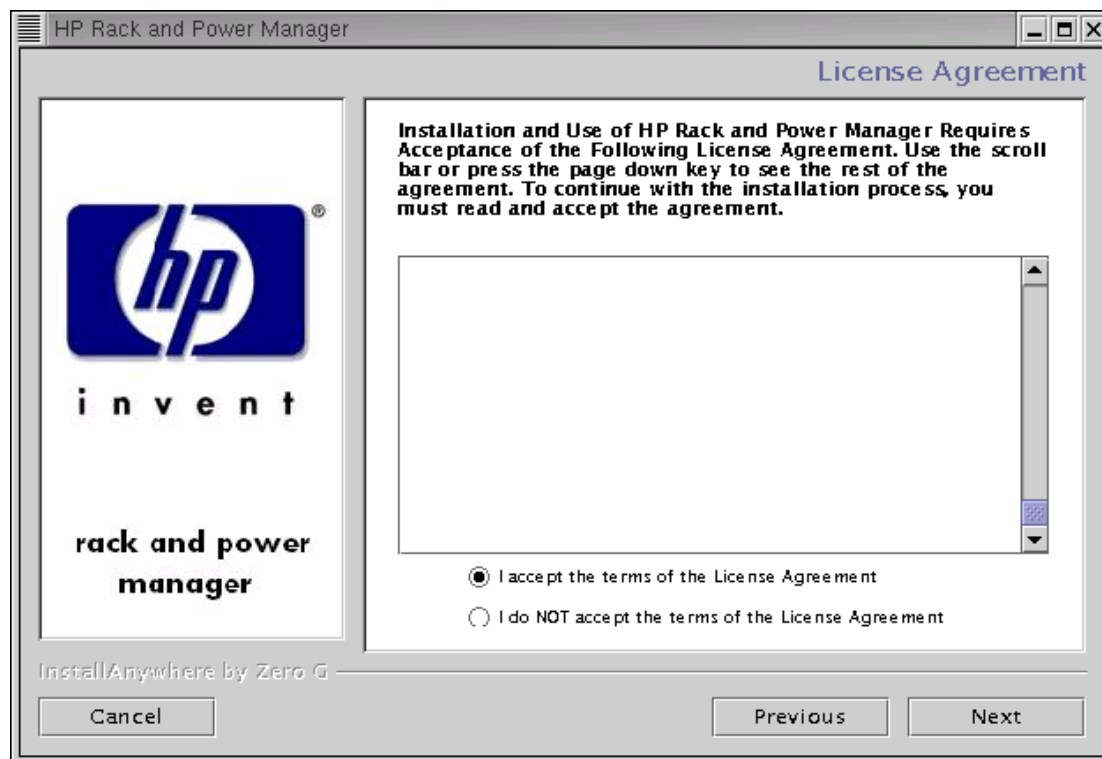
2. Read the introduction, and click **Next**.



The License Agreement screen appears.

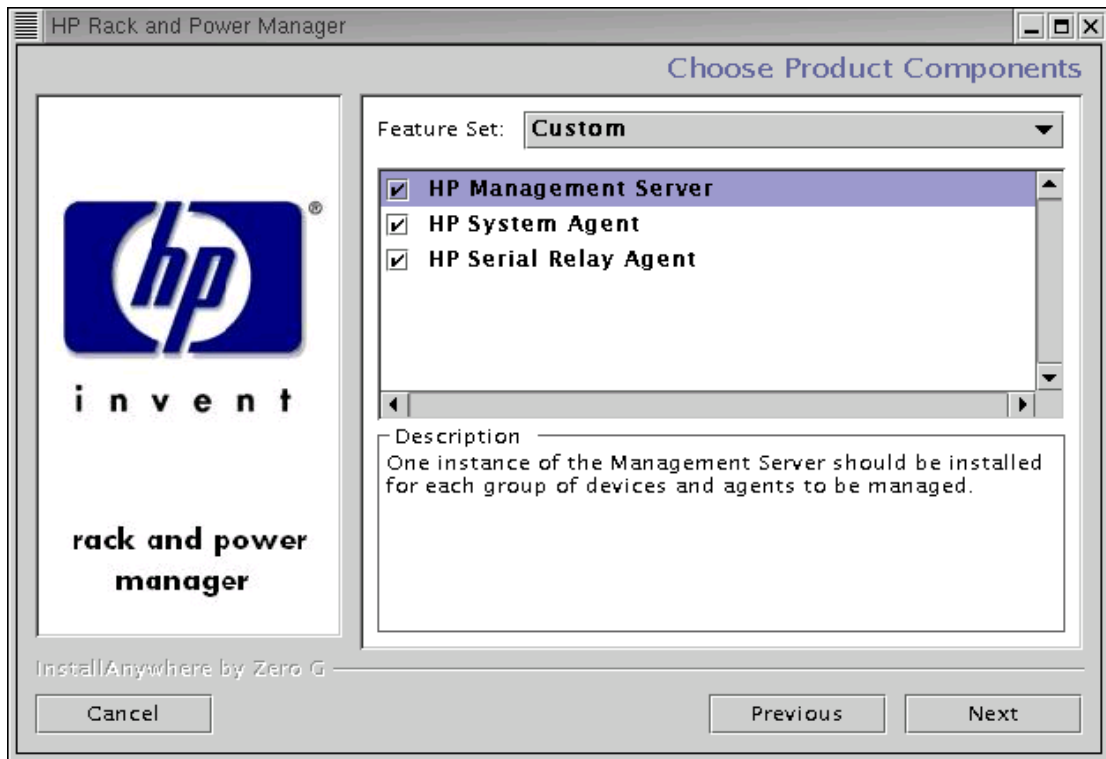
3. Read the license agreement, select **I accept the terms of the License Agreement**, and click **Next**.

NOTE: The radio buttons are inactive until you scroll down to the bottom of the license agreement.



The Choose Product Components screen appears.

4. Select the component you want to install, and click **Next**.

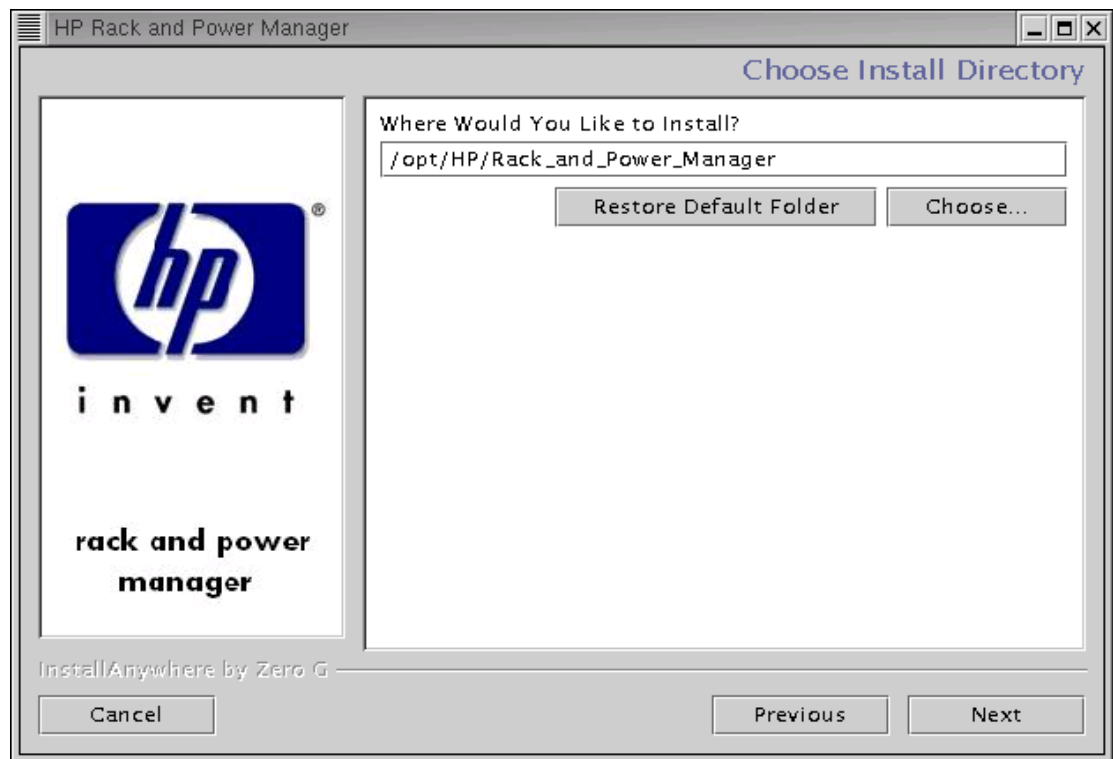


NOTE: Multiple components can be installed at one time. Available components include:

- **HP Management Server**—Install the Management Server on the computer that will be responsible for managing other systems and devices.
- **HP System Agent**—Install the System Agent on any computer that will control the shutdown and restart of a UPS load segment or receive commands from the Management Server.
- **HP Serial Relay Agent**—Install the Serial Relay Agent on any computer that is serially attached to a UPS.

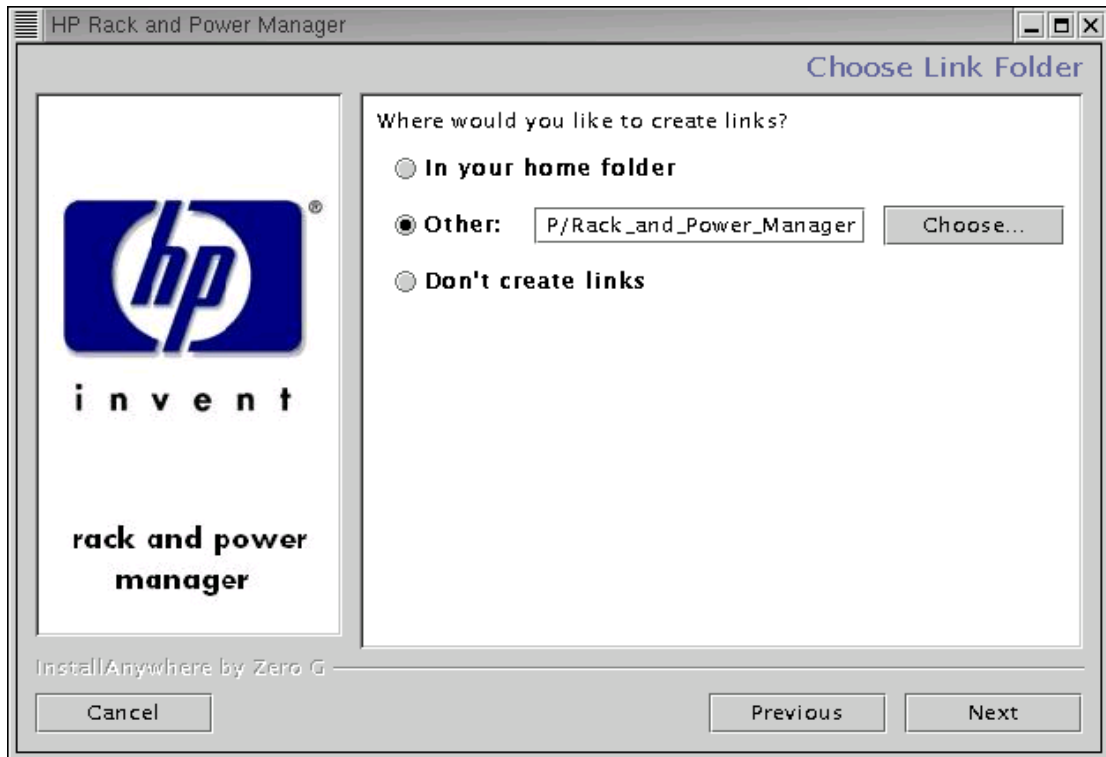
The Choose Install Directory screen appears.

5. Click **Next** to install the components in the default folder that is displayed in the Where Would You Like to Install? field. To specify a different folder, click **Choose**, navigate to the appropriate folder, and click **Next**.



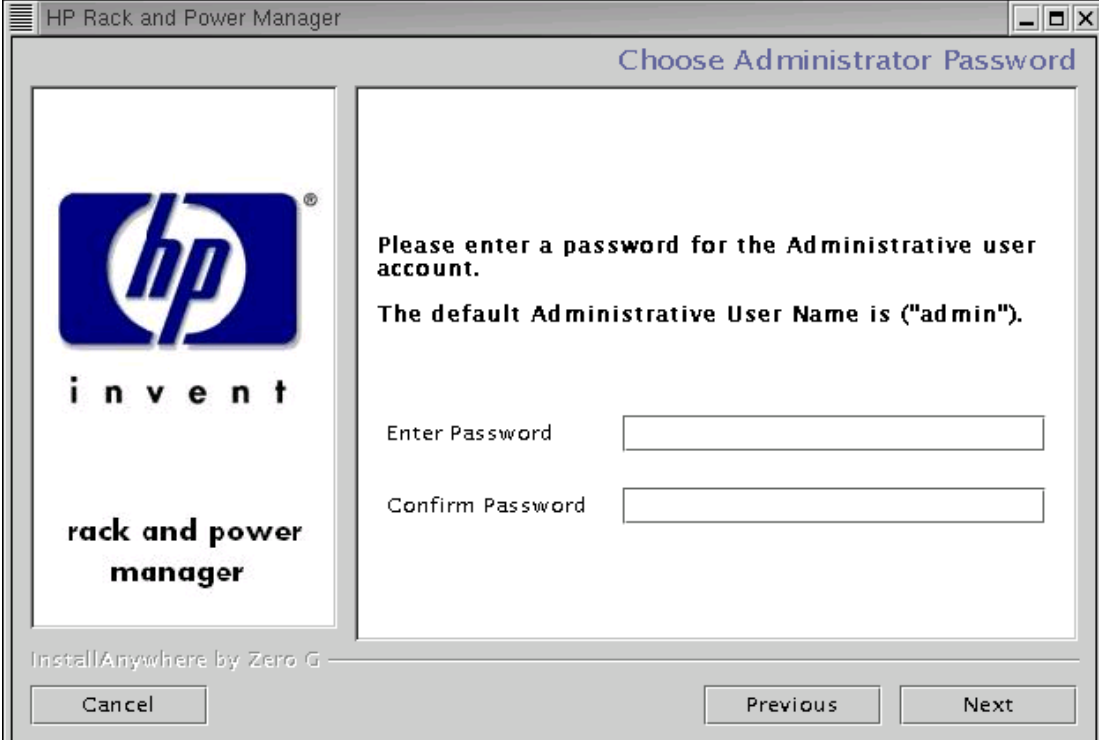
The Choose Link Folder screen appears.

6. Select the appropriate radio button to create SetupSRA and UninstallRPM links for HP Rack and Power Manager:
 - Home folder—Creates the links in the home folder
 - Other—Creates the links in a specified folder on the hard drive
7. Click **Next**.



8. If you are installing the Management Server, enter the password for the first administrator in the Enter Password field. Confirm the password by reentering the password in the Confirm Password field. Additional administrator accounts and passwords can be set up on the HP Rack and Power Manager User Administration screen. For more information on adding accounts, refer to “User Administration Screen” in Chapter 4.

Click **Next**.



The screenshot shows a Windows-style window titled "HP Rack and Power Manager". The main heading inside the window is "Choose Administrator Password". On the left side, there is a logo consisting of the "hp" logo above the word "invent" in a spaced-out font, and below that, the words "rack and power manager" in a bold, lowercase font. The right side of the window contains the following text: "Please enter a password for the Administrative user account." followed by "The default Administrative User Name is ('admin')." Below this text are two input fields. The first is labeled "Enter Password" and the second is labeled "Confirm Password". At the bottom of the window, there is a status bar that says "InstallAnywhere by Zero G". Below this status bar are three buttons: "Cancel", "Previous", and "Next".

9. If you are installing the Management Server, enter the password needed to allow HP Rack and Power Manager to communicate with the database in the Enter Password field. Confirm the password by reentering the password in the Confirm Password field. The database password can be changed after installation is complete on the HP Rack and Power Manager Database screen. For more information on changing the database password, refer to “Database Screen” in Chapter 4.

Click **Next**.

The screenshot shows a Windows-style dialog box titled "HP Rack and Power Manager". The main heading inside is "Choose Administrator Password". On the left side, there is a vertical panel containing the HP logo (a blue circle with "hp" in white) and the word "invent" below it. Further down, the text "rack and power manager" is displayed. The right side of the dialog contains instructional text: "Please enter a password for securing data access between the RPM application and its database." and "Please note the database password you enter, it may need to be referenced in the future." Below this text are two input fields: "Enter Password" and "Confirm Password". At the bottom of the dialog, there are three buttons: "Cancel" on the left, and "Previous" and "Next" on the right. A small status bar at the bottom left of the dialog area says "InstallAnywhere by Zero G".

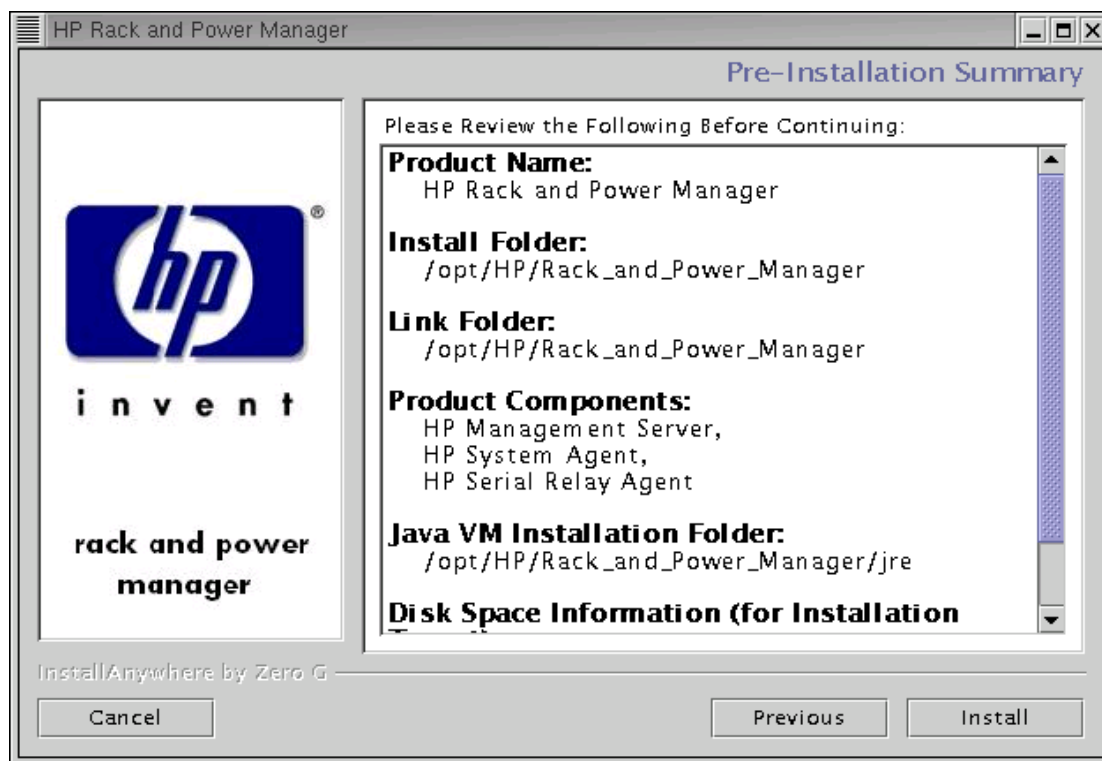
10. If you are installing the Management Server or the System Agent, enter and confirm a password to secure the SSL certificate. The password cannot contain blank spaces. Click **Next**.



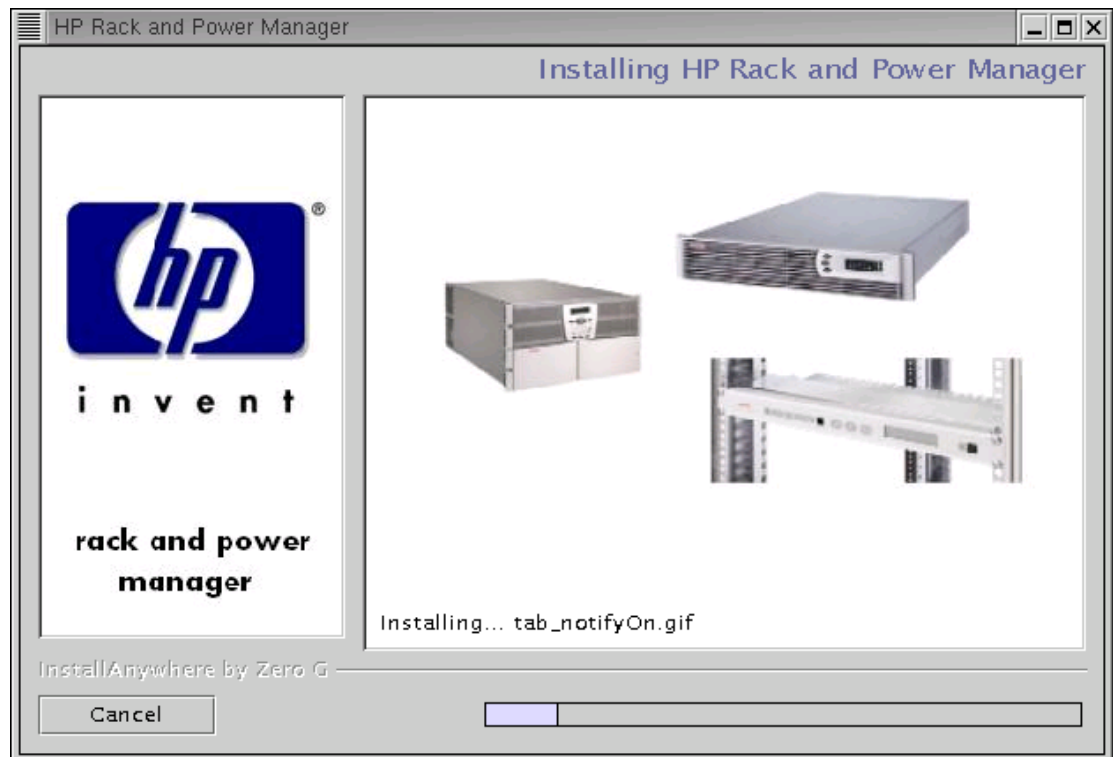
The screenshot shows a Windows-style dialog box titled "HP Rack and Power Manager" with a subtitle "Choose Administrator Password". On the left side, there is a logo consisting of the HP logo above the word "invent" and "rack and power manager" below it. The main area on the right contains the text: "Please enter a password to secure the SSL Certificate that will be generated during this installation. The password CANNOT contain blank spaces." Below this text are two input fields: "Enter Password" and "Confirm Password". At the bottom of the dialog, there are three buttons: "Cancel", "Previous", and "Next". The text "InstallAnywhere by Zero G" is visible in the bottom left corner of the dialog frame.

The Pre-Installation Summary screen appears.

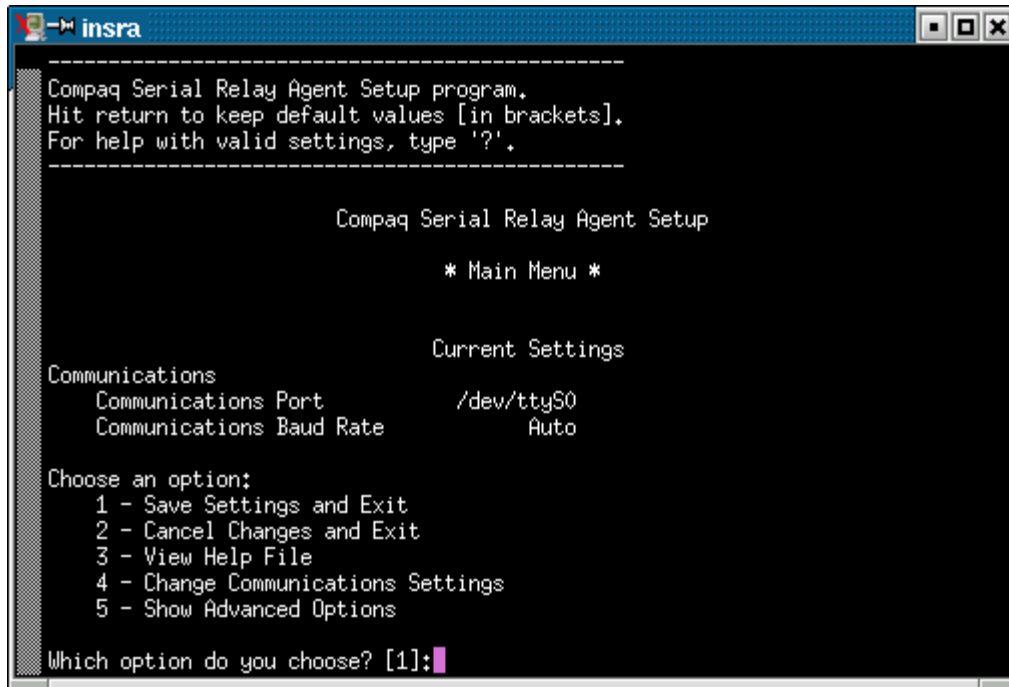
11. Review the installation information, and click **Install**.



The Installing HP Rack and Power Manager screen appears. The components install, and a status bar indicates the installation progress.



12. If you are installing the Serial Relay Agent, check the current settings displayed on the screen. To adjust the settings, select option **4**, and enter the communications port on the computer to which the UPS is attached. Enter the baud rate at which the UPS communicates (9600 or 19200). Select option **1** to save the changes and exit.

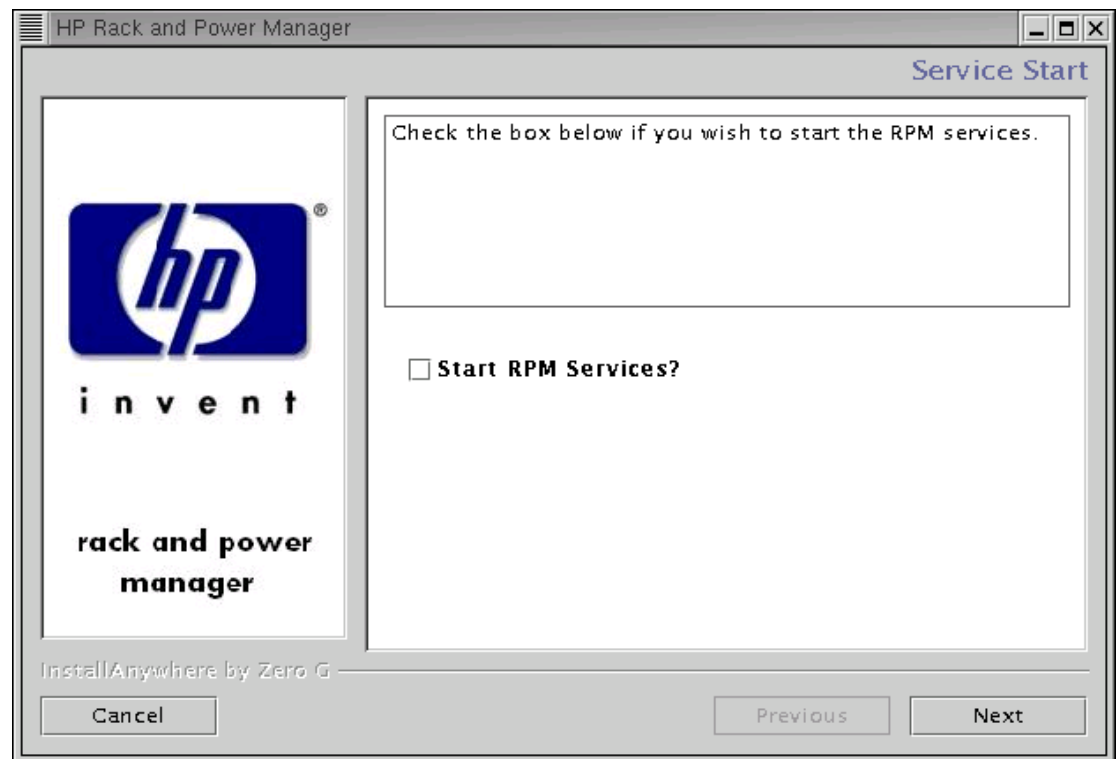


NOTE: Select option **5** to view an extended list of Serial Relay Agent setup options. Select option **3** to display a help file for Serial Relay Agent setup, including advanced options.

A message appears, asking to start the Serial Relay Agent. Click **Yes**. The installation program attempts to communicate with the UPS. After communication is established, the Service Start screen appears.

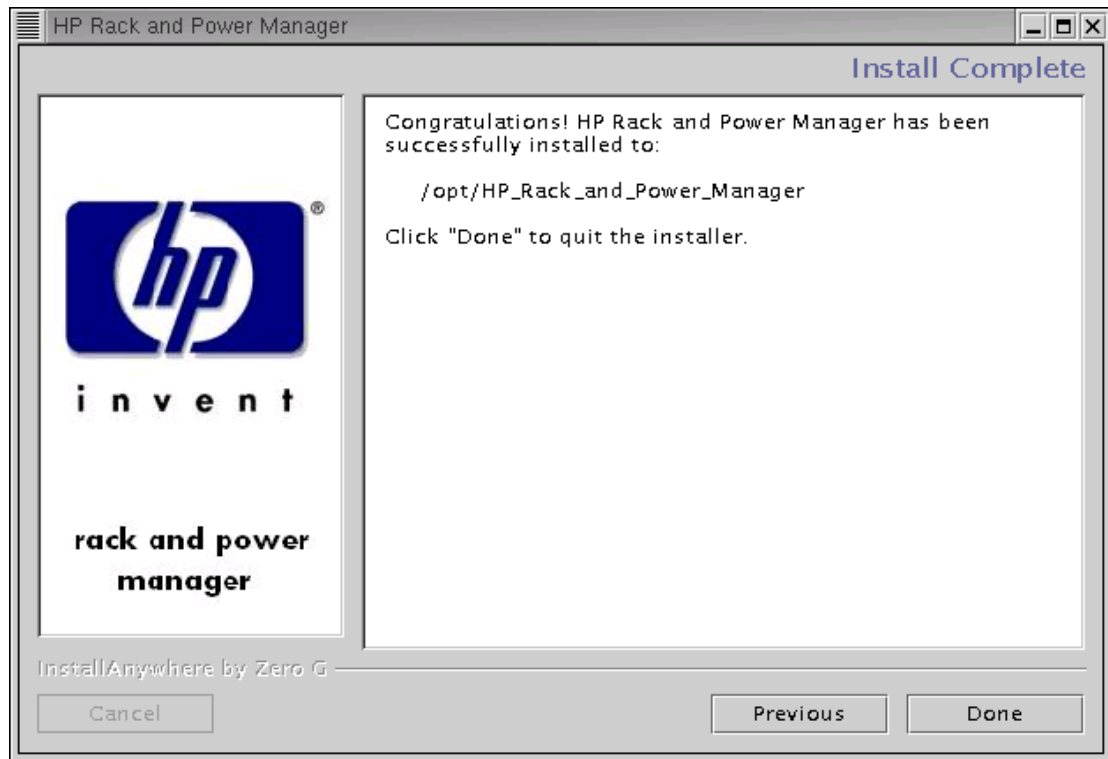
NOTE: If the Serial Relay Agent fails to communicate with the UPS, refer to Chapter 6, "Troubleshooting."

13. Select **Start RPM Services?** and click **Next**.



The Install Complete screen appears.

14. Read the information, and click **Done**.



Installing the System Agent and Serial Relay Agent Using the Silent Installation Method

The System Agent and Serial Relay Agent can be installed using the Silent installation option on any supported Linux operating system.

To install using the Silent installation option, a properties file must be created using a text editor with the appropriate variables set for the desired installation options. An example of the properties file is located on the HP Rack and Power Management Pack CD in the HPRPM/Linux folder.

A description of the variables used on the properties file is included in Table 2-7. Examples of the properties file follow.

Table 2-7: Complete List of Variables

| Variable | Function |
|---|--|
| INSTALLER_UI {should be equal to silent} | Use this variable to indicate the install type. |
| CHOSEN_INSTALL_SET {agent, SRA, agentSRA} | Use this variable to select which agent component to install. <ul style="list-style-type: none"> • Use <code>agent</code> to install the System Agent. • Use <code>SRA</code> to install the Serial Relay Agent. • Use <code>agentSRA</code> to install both the System Agent and Serial Relay Agent. |
| USER_INSTALL_DIR {Divisions in the file structure between directories should be indicated with the symbol '\$/\$'. Example: C:/\$hprpm} | Use this variable to indicate the path to which the agent component is to be installed. |
| USER_INPUT_CERT_PW_1 {password needed if CHOSEN_INSTALL_SET = agent or CHOSEN_INSTALL_SET = agentSRA; should be equal to USER_INPUT_CERT_PW_2} | Use this variable to input the SSL certificate password that will be generated during the install. |
| USER_INPUT_SRA_COM {Communications Port Number the UPS is connected to, needed if CHOSEN_INSTALL_SET = SRA or CHOSEN_INSTALL_SET = agentSRA} | Use this variable to input the COM port number to which the UPS is connected. |
| USER_INPUT_RESULTS_START_1 {this variable is needed to start the services installed; it should be equal to Start RPM Services?} | Use this variable to start the HP Rack and Power Manager service. |

Example 2-3: Silent System Agent Installation

```

INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agent
USER_INSTALL_DIR = $/$opt$/$HP$/$RPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_RESULTS_START_1 = Start RPM Services?

```

Example 2-4: Silent System Agent and Serial Relay Agent Installation

```
INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agentSRA
USER_INSTALL_DIR = $/$opt$/$HP$/$RPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_SRA_COM = 2
USER_INPUT_RESULTS_START_1 = Start CRPM Services?
```

After saving the text file, run the installer by entering *<path to install executable> -f <path to properties file>* at the command prompt. For example, if the install executable (SETUP.EXE) is in the directory `c:/hprpm` and the properties file (INSTALL.PROP) is in the directory `c:/docs`, from a command prompt at `c:/hprpm`, enter:

```
SETUP.EXE -f C:/DOCS/INSTALL.PROP
```

Installing Components on NetWare Operating Systems

The System Agent and Serial Relay Agent can be installed using the GUI installation option or Silent installation option on any supported NetWare operating system.

Installing the Components Using the GUI Installation Method

Installing HP Rack and Power Manager Agents on NetWare requires two steps. Step one installs files to the NetWare server from a Windows workstation. Step two configures and loads the software on the NetWare server.

Requirements for installation:

- A Novell Client must be installed and configured on a Windows workstation.

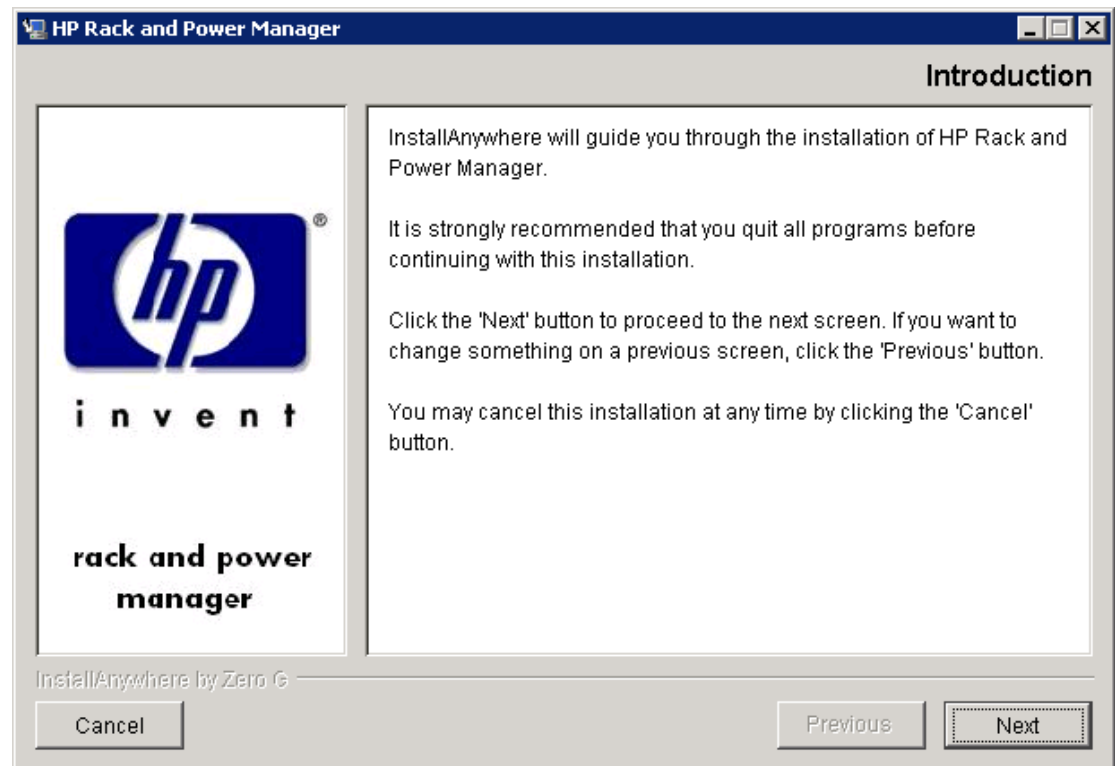
NOTE: The account used to log into the NetWare server using the Novell Client should have appropriate file system rights to install HP Rack and Power Manager Agents.
- A drive must be mapped from the Windows workstation running the Novell Client to the root of the `SYS:` volume on the target NetWare server.

To install the components on a NetWare system using the GUI installation method:

1. Insert the Rack and Power Management CD into the Windows workstation running the Novell Client. Locate and run the NetWare Agent executable located in the HPRPM/NetWare folder (INSTALL.EXE).

The Introduction screen appears.

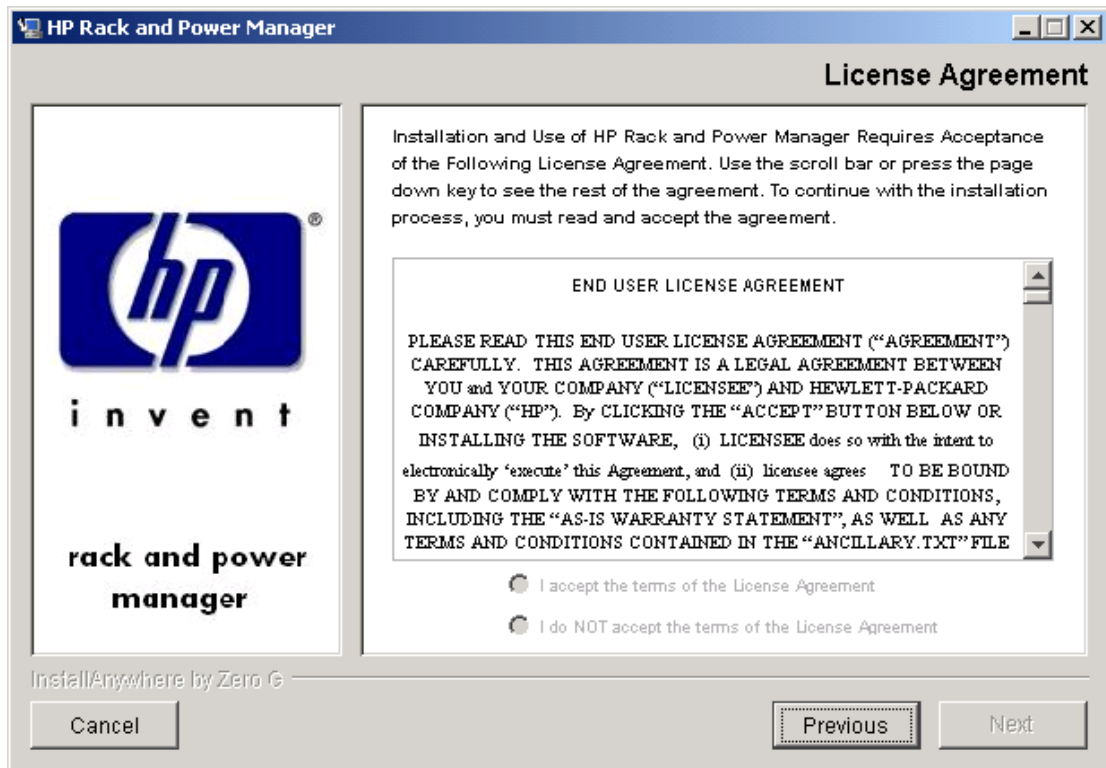
2. Read the introduction, and click **Next**.



The License Agreement screen appears.

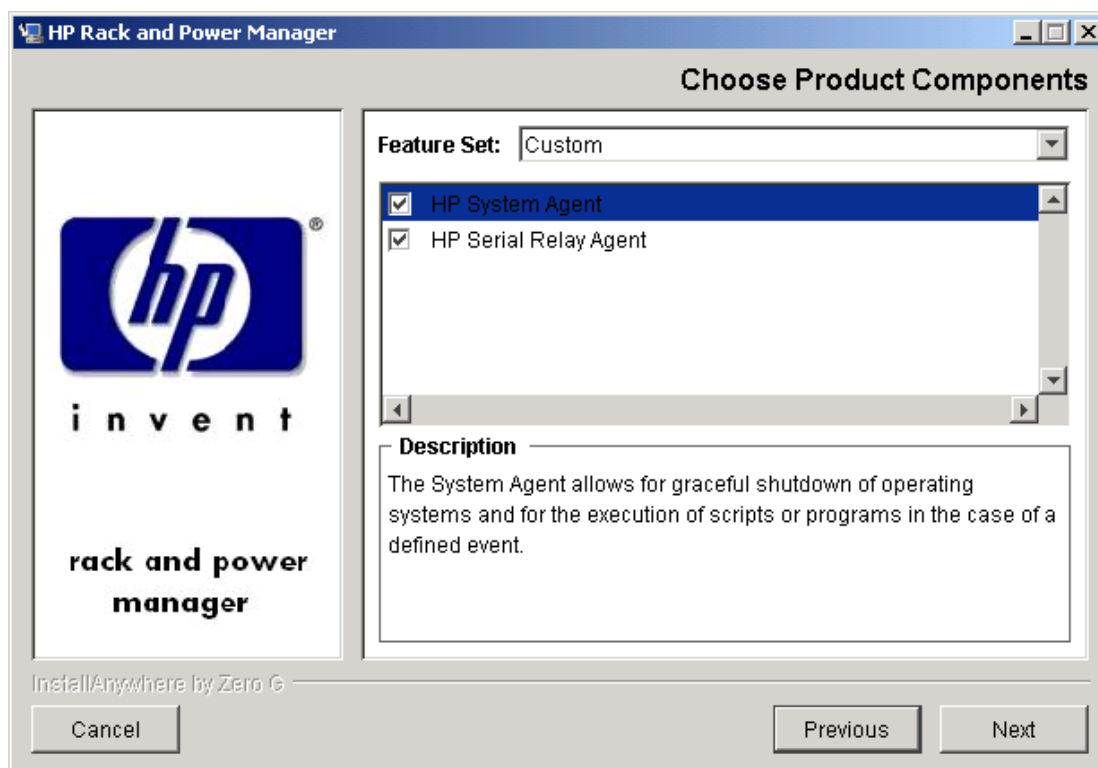
3. Read the license agreement, select **I accept the terms of the License Agreement**, and click **Next**.

NOTE: The radio buttons are inactive until you scroll down to the bottom of the license agreement.



The Choose Product Components screen appears.

4. Select the component you want to install, and click **Next**.

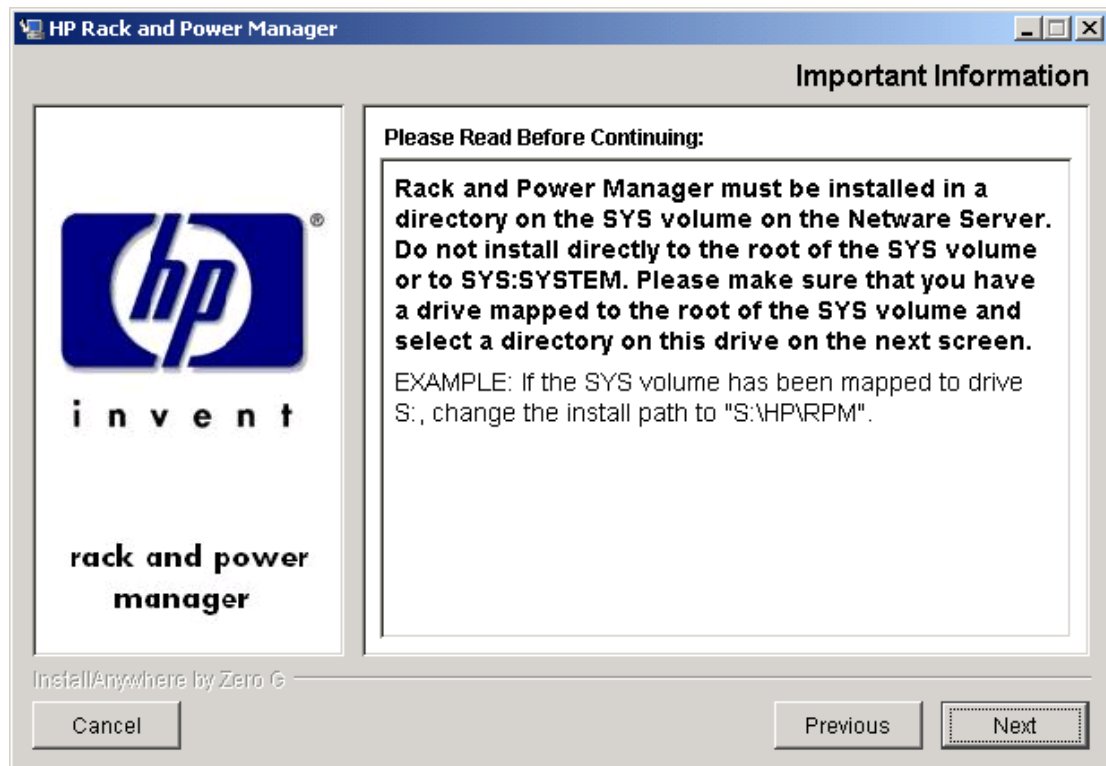


NOTE: Multiple components can be installed at one time. Available components include:

- **HP System Agent**—Install the System Agent on any computer that will control the shutdown and restart of a UPS load segment or receive commands from the Management Server.
- **HP Serial Relay Agent**—Install the Serial Relay Agent on any computer that is serially attached to a UPS.

The Important Information screen appears.

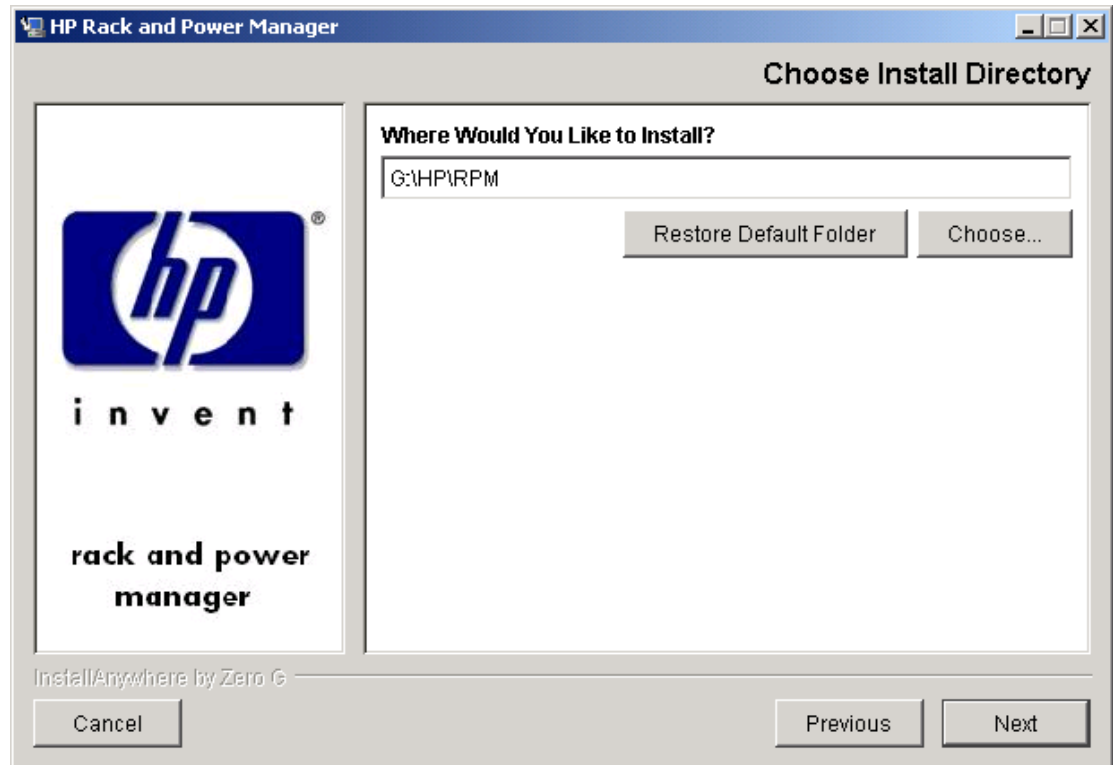
5. Read the information contained on the screen, and click **Next**.



The Choose Install Directory screen appears.

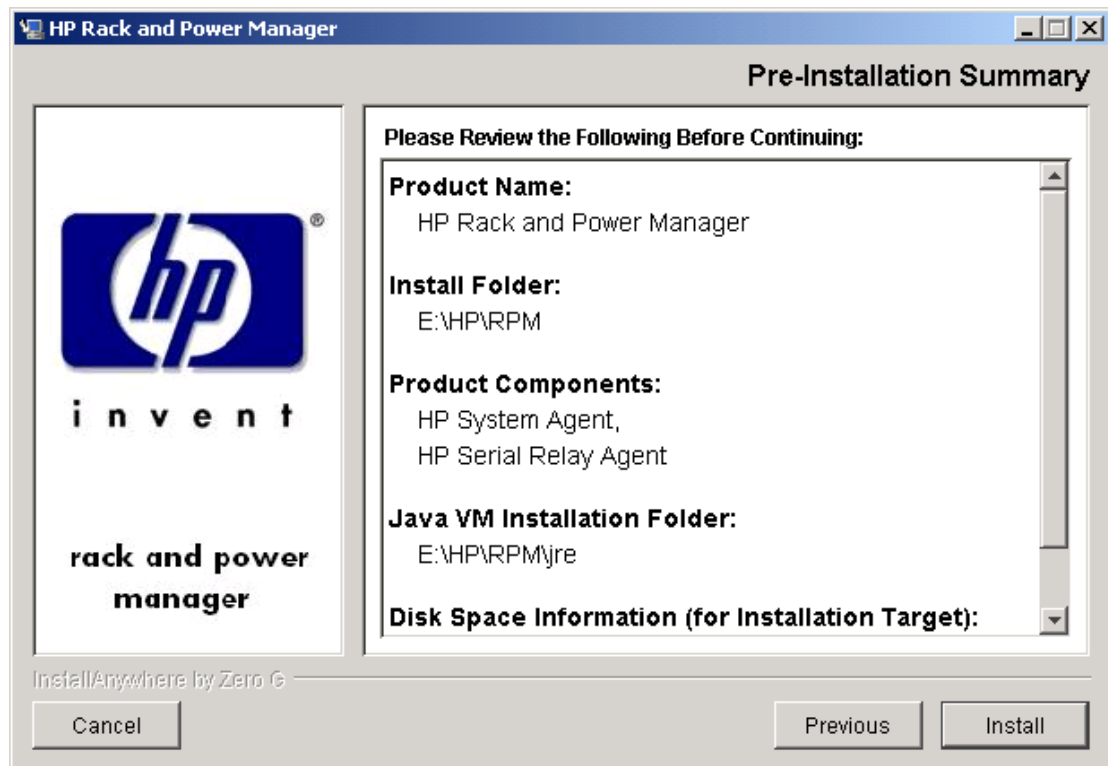
6. Enter the desired install directory in the Where Would You Like to Install? field and click **Next**.

NOTE: Be sure to change the default drive letter, if necessary, to the drive mapped to the SYS : volume of the target server.

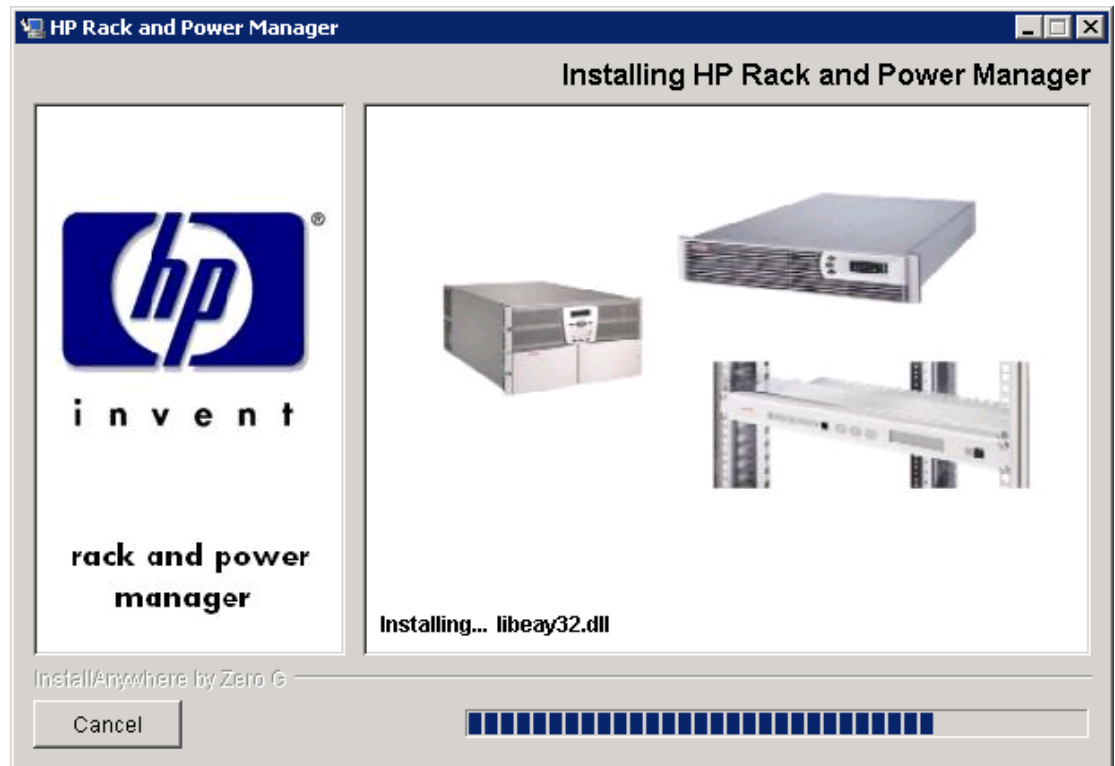


The Pre-Installation Summary screen appears.

7. Review the installation information, and click **Install**.

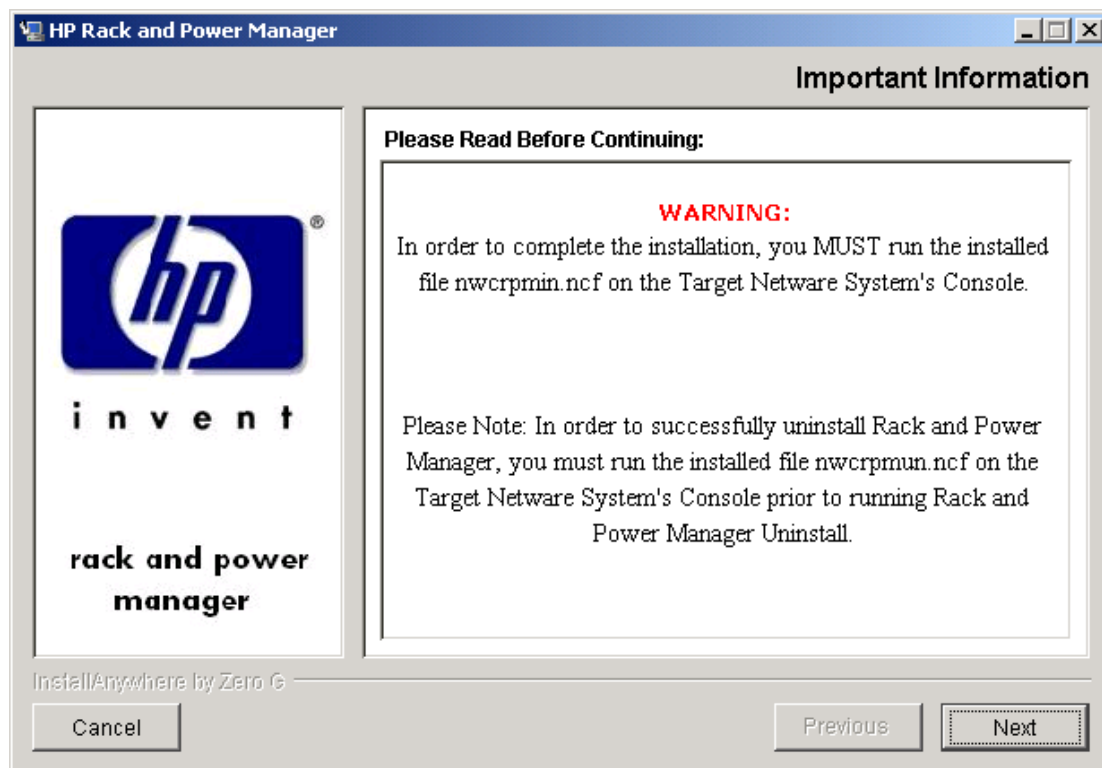


The Installing HP Rack and Power Manager screen appears. The components install, and a status bar indicates the installation progress.



After the installation is complete, the Important Information screen appears.

8. Read the information contained on the screen, and click **Next**.



The Install Complete screen appears.

9. Read the information, and click **Done**.



10. To complete installation of the System Agent, run the following commands from the NetWare server Console:

```
<INSTALL_PATH>/NWCRPMIN.NCF
CRPMLD.NCF
```

NOTE: The System Shutdown Agent screen appears, indicating that the System Agent has been loaded. In normal operation, this screen might be blank.

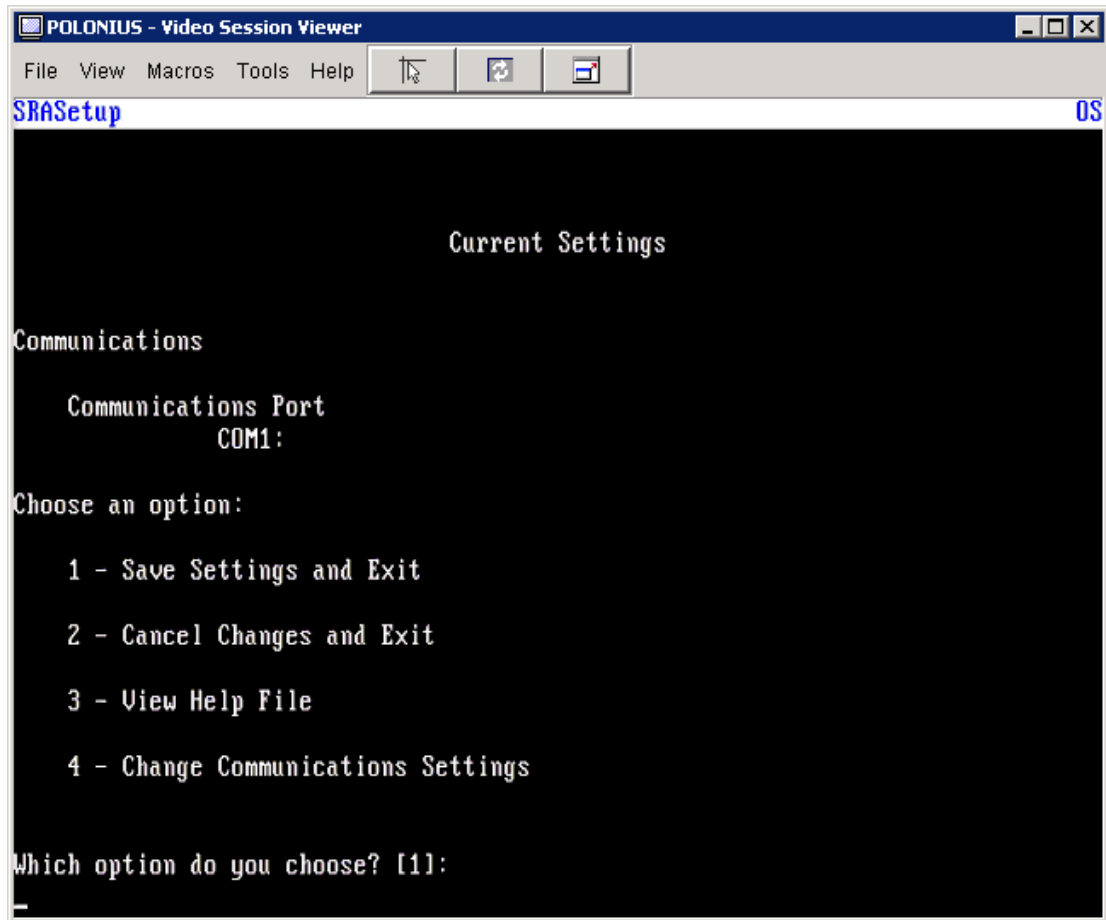
11. To complete installation of the Serial Relay Agent:

- a. Run the following command from the NetWare server Console:

```
<INSTALL_PATH>/NWCRPMIN.NCF
```

The Serial Relay Agent Setup screen appears, allowing for configuration of the Serial Relay Agent. If it is necessary to reconfigure the Serial Relay Agent after the installation, run `SRASETUP.NLM` from the directory in to which the software was installed (usually `SYS:HP/RPM`).

- b. Select option **4** to enter the communications port on the computer to which the UPS is attached. Select option **1** to save the changes and exit.



- c. Run the following command:

```
crpmlld.ncf
```

The Serial Relay Agent screen appears, indicating that the Serial Relay Agent has been loaded. If correctly configured, the message "UPS communications established" appears. This process might take a few moments. If the message does not appear, check the hardware configuration and rerun `SRASETUP.NLM`.

Installing the System Agent and Serial Relay Agent Using the Silent Installation Method

The System Agent and Serial Relay Agent can be installed using the Silent installation option on any supported NetWare operating system.

To install using the Silent installation option, a properties file must be created using a text editor with the appropriate variables set for the desired installation options. An example of the properties file is located on the HP Rack and Power Management Pack CD in the HPRPM/NetWare folder.

A description of the variables used on the properties file is included in Table 2-8. Examples of the properties file follow.

Table 2-8: Complete List of Variables

| Variable | Function |
|---|--|
| INSTALLER_UI {should be equal to silent} | Use this variable to indicate the install type. |
| CHOSEN_INSTALL_SET {agent, SRA, agentSRA} | Use this variable to select which agent component to install. <ul style="list-style-type: none"> • Use <code>agent</code> to install the System Agent. • Use <code>SRA</code> to install the Serial Relay Agent. • Use <code>agentSRA</code> to install both the System Agent and Serial Relay Agent. |
| USER_INSTALL_DIR {Divisions in the file structure between directories should be indicated with the symbol '\$/\$'. Example: C:/\$/hprpm} | Use this variable to indicate the path to which the agent component is to be installed. |
| USER_INPUT_CERT_PW_1 {password needed if CHOSEN_INSTALL_SET = agent or CHOSEN_INSTALL_SET = agentSRA; should be equal to USER_INPUT_CERT_PW_2} | Use this variable to input the SSL certificate password that will be generated during the install. |
| USER_INPUT_SRA_COM {Communications Port Number the UPS is connected to, needed if CHOSEN_INSTALL_SET = SRA or CHOSEN_INSTALL_SET = agentSRA} | Use this variable to input the COM port number to which the UPS is connected. |
| USER_INPUT_RESULTS_START_1 {this variable is needed to start the services installed; it should be equal to Start RPM Services?} | Use this variable to start the HP Rack and Power Manager service. |

Example 2-5: Silent System Agent Installation

```
INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agent
USER_INSTALL_DIR = S:/$HPRPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_RESULTS_START_1 = Start RPM Services?
```

Example 2-6: Silent System Agent and Serial Relay Agent Installation

```
INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agentSRA
USER_INSTALL_DIR = S:/$HPRPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_SRA_COM = 2
USER_INPUT_RESULTS_START_1 = Start CRPM Services?
```

After saving the text file:

1. Run the installer by entering *<path to install executable> -f <path to properties file>* at the command prompt on the Windows workstation. For example, if the install executable (INSTALL.EXE) is in the directory *c:/hprpm* and the properties file (INSTALL.PROP) is in the directory *c:/docs*, from a command prompt at *c:/hprpm*, enter:

```
INSTALL.EXE -f C:/DOCS/INSTALL.PROP
```

2. To complete the installation, run the following commands from the NetWare server Console:

```
<INSTALL_PATH>/NWCRPMIN.NCF
CRPMLD.NCF
```

Upgrading From HP Rack and Power Manager 1.0

Upgrade the Management Server, System Agent, or Serial Relay Agent from a previous version of HP Rack and Power Manager using the GUI or Silent method.

When upgrading the software from a previous version, keep in mind:

- The Management Server component must be upgraded using the GUI method.
- Any computer running the Management Server component must have all components upgraded using the GUI method.
- All managed agents should be upgraded before upgrading the Management Server.
- Back up the system data before attempting the upgrade. For more information on backing up data, refer to Appendix D in this guide.

Upgrading Components on Windows Systems Using the GUI Method

IMPORTANT: The Management Server component must be upgraded using the GUI method.

IMPORTANT: Upgrade all managed agents before upgrading the Management Server component.

To upgrade components using the GUI method:

1. Insert the Rack and Power Management Pack CD into the CD-ROM drive of the computer. If the AutoPlay feature is enabled, the installation menu automatically starts.

If the AutoPlay feature is disabled, explore the CD, and double-click `SETUP.EXE` in the `HPRPM/Windows` folder.

If the operating system running is Japanese, the Language screen appears. Select the installation language, and click **Next**. The Introduction screen appears. Read the introduction, and click **Next**.

The License Agreement screen appears.

2. Read the license agreement, select **I accept the terms of the License Agreement**, and click **Next**.

NOTE: The radio buttons are inactive until you scroll down to the bottom of the license agreement.

The Choose Product Components screen appears.

3. Select the component you want to upgrade, and click **Next**. The installer checks the system for previously installed components and displays the components on the screen. Click **Next**.

IMPORTANT: All previously installed components will be upgraded regardless of which component are selected. Any computer running the Management Server component must have all components upgraded using the GUI method.

4. A warning appears to remind you to back up your system data before proceeding. Back up the data, and click **OK**. The Pre-Installation Summary screen appears.
5. Verify the components that are to be upgraded, and click **Install**. After the components are upgraded, the Service Start screen appears.
6. Select **Start RPM Services?** and click **Next**. The Install Complete screen appears.
7. Click **Done** to complete the upgrade.

Upgrading Components on Windows Systems Using the Silent Method

IMPORTANT: The Management Server component must be upgraded using the GUI method.

IMPORTANT: Upgrade all managed agents before upgrading the Management Server component.

To upgrade the components using the Silent option, a properties file must be created using a text editor with the appropriate variables set for the desired options. An example of the properties file is located on the HP Rack and Power Management Pack CD in the HPRPM/Windows folder.

A description of the variables used on the properties file is included in Table 2-9. Examples of the properties file follow.

Table 2-9: Complete List of Variables

| Variable | Function |
|---|--|
| INSTALLER_UI {should be equal to silent} | Use this variable to indicate the install type. |
| CHOSEN_INSTALL_SET {agent, SRA, agentSRA} | Use this variable to select which agent component to install. <ul style="list-style-type: none"> • Use agent to install the System Agent. • Use SRA to install the Serial Relay Agent. • Use agent.SRA to install both the System Agent and Serial Relay Agent. |
| USER_INSTALL_DIR {Divisions in the file structure between directories should be indicated with the symbol '\$/\$'. Example: C:\$/\$hprpm} | Use this variable to indicate the path to which the agent component is to be installed. |
| USER_INPUT_CERT_PW_1 {password needed if CHOSEN_INSTALL_SET = agent or CHOSEN_INSTALL_SET = agentSRA; should be equal to USER_INPUT_CERT_PW_2} | Use this variable to input the SSL certificate password that will be generated during the install. |
| USER_INPUT_RESULTS_START_1 {this variable is needed to start the services installed; it should be equal to Start RPM Services?} | Use this variable to start the HP Rack and Power Manager service. |

Example 2-7: Silent System Agent Installation

```

INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agent
USER_INSTALL_DIR = c:$\Program Files$\HPRPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_RESULTS_START_1 = Start RPM Services?

```

Example 2-8: Silent System Agent and Serial Relay Agent Installation

```

INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agentSRA
USER_INSTALL_DIR = c:/$Program Files$/HP$/SRPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_RESULTS_START_1 = Start CRPM Services?

```

After saving the text file, run the installer by entering *<path to install executable> -f <path to properties file>* at the command prompt. For example, if the install executable (SETUP.EXE) is in the directory `c:/hprpm` and the properties file (INSTALL.PROP) is in the directory `c:/docs`, from a command prompt at `c:/hprpm`, enter:

```
SETUP.EXE -f C:/DOCS/INSTALL.PROP
```

Upgrading Components on Linux Systems Using the GUI Method

IMPORTANT: The Management Server component must be upgraded using the GUI method.

IMPORTANT: Upgrade all managed agents before upgrading the Management Server component.

To upgrade components using the GUI method:

1. Insert the Rack and Power Management Pack CD into the CD-ROM drive of the computer.

Mount the CD and locate and run the Linux executable file located in the HPRPM/Linux folder (INSTALL.BIN).

If the operating system running is Japanese, the Language screen appears. Select the installation language, and click **Next**. The Introduction screen appears. Read the introduction, and click **Next**.

The License Agreement screen appears.

2. Read the license agreement, select **I accept the terms of the License Agreement**, and click **Next**.

NOTE: The radio buttons are inactive until you scroll down to the bottom of the license agreement.

The Choose Product Components screen appears.

3. Select the component you want to upgrade, and click **Next**. The installer checks the system for previously installed components and displays the components on the screen. Click **Next**.

IMPORTANT: All previously installed components will be upgraded regardless of which component are selected. Any computer running the Management Server component must have all components upgraded using the GUI method.

4. A warning appears to remind you to back up your system data before proceeding. Back up the data, and click **OK**. The Pre-Installation Summary screen appears.

5. Verify the components that are to be upgraded, and click **Install**. After the components are upgraded, the Service Start screen appears.
6. Select **Start RPM Services?** and click **Next**. The Install Complete screen appears.
7. Click **Done** to complete the upgrade.

Upgrading Components on Linux Systems Using the Silent Method

IMPORTANT: The Management Server component must be upgraded using the GUI method.

IMPORTANT: Upgrade all managed agents before upgrading the Management Server component.

To upgrade the components using the Silent option, a properties file must be created using a text editor with the appropriate variables set for the desired installation options. An example of the properties file is located on the HP Rack and Power Management Pack CD in the HPRPM/Linux folder.

A description of the variables used on the properties file is included in Table 2-10. Examples of the properties file follow.

Table 2-10: Complete List of Variables

| Variable | Function |
|---|--|
| INSTALLER_UI {should be equal to silent} | Use this variable to indicate the install type. |
| CHOSEN_INSTALL_SET {agent, SRA, agentSRA} | Use this variable to select which agent component to install. <ul style="list-style-type: none"> • Use <code>agent</code> to install the System Agent. • Use <code>SRA</code> to install the Serial Relay Agent. • Use <code>agentSRA</code> to install both the System Agent and Serial Relay Agent. |
| USER_INSTALL_DIR {Divisions in the file structure between directories should be indicated with the symbol '\$/\$'. Example: C:/\$/hprpm} | Use this variable to indicate the path to which the agent component is to be installed. |
| USER_INPUT_CERT_PW_1 {password needed if CHOSEN_INSTALL_SET = agent or CHOSEN_INSTALL_SET = agentSRA; should be equal to USER_INPUT_CERT_PW_2} | Use this variable to input the SSL certificate password that will be generated during the install. |
| USER_INPUT_RESULTS_START_1 {this variable is needed to start the services installed; it should be equal to Start RPM Services?} | Use this variable to start the HP Rack and Power Manager service. |

Example 2-9: Silent System Agent Installation

```

INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agent
USER_INSTALL_DIR = $/$opt$/$HP$/$RPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_RESULTS_START_1 = Start RPM Services?

```

Example 2-10: Silent System Agent and Serial Relay Agent Installation

```

INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agentsRA
USER_INSTALL_DIR = $/$opt$/$HP$/$RPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_RESULTS_START_1 = Start CRPM Services?

```

After saving the text file, run the installer by entering *<path to install executable> -f <path to properties file>* at the command prompt. For example, if the install executable (SETUP.EXE) is in the directory *c:/hprpm* and the properties file (INSTALL.PROP) is in the directory *c:/docs*, from a command prompt at *c:/hprpm*, enter:

```
SETUP.EXE -f C:/DOCS/INSTALL.PROP
```

Upgrading Components on NetWare Systems Using the GUI Method

IMPORTANT: Unload the modules *SRA.NLM* and *SHDNAGNT.NLM* before upgrading.

IMPORTANT: The Management Server component must be upgraded using the GUI method.

IMPORTANT: Upgrade all managed agents before upgrading the Management Server component.

To upgrade components using the GUI method:

1. Insert the Rack and Power Management CD into the Windows workstation running the Novell Client. Locate and run the NetWare Agent executable located in the *HPRPM/NetWare* folder (*INSTALL.EXE*).

The Introduction screen appears.

2. Read the introduction, and click **Next**. The License Agreement screen appears.
3. Read the license agreement, select **I accept the terms of the License Agreement**, and click **Next**.

NOTE: The radio buttons are inactive until you scroll down to the bottom of the license agreement.

The Choose Product Components screen appears.

4. Select the component you want to upgrade, and click **Next**. The installer checks the system for previously installed components and displays the components on the screen. Click **Next**.

IMPORTANT: All previously installed components will be upgraded regardless of which component are selected. Any computer running the Management Server component must have all components upgraded using the GUI method.

5. A warning appears to remind you to back up your system data before proceeding. Back up the data, and click **OK**. The Pre-Installation Summary screen appears.
6. Verify the components that are to be upgraded, and click **Install**. After the components are upgraded, the Service Start screen appears.
7. Select **Start RPM Services?** and click **Next**. The Install Complete screen appears.
8. Click **Done** to complete the upgrade.

Upgrading Components on NetWare Systems Using the Silent Method

IMPORTANT: The Management Server component must be upgraded using the GUI method.

IMPORTANT: Upgrade all managed agents before upgrading the Management Server component.

To upgrade the components using the Silent option, a properties file must be created using a text editor with the appropriate variables set for the desired installation options. An example of the properties file is located on the HP Rack and Power Management Pack CD in the HPRPM/NetWare folder.

A description of the variables used on the properties file is included in Table 2-11. Examples of the properties file follow. Examples of the properties file follow.

Table 2-11: Complete List of Variables

| Variable | Function |
|---|---|
| INSTALLER_UI {should be equal to silent} | Use this variable to indicate the install type. |
| CHOSEN_INSTALL_SET {agent, SRA, agentSRA} | Use this variable to select which agent component to install. <ul style="list-style-type: none"> • Use agent to install the System Agent. • Use SRA to install the Serial Relay Agent. • Use agentSRA to install both the System Agent and Serial Relay Agent. |
| USER_INSTALL_DIR {Divisions in the file structure between directories should be indicated with the symbol '\\'. Example: C:\\hprpm} | Use this variable to indicate the path to which the agent component is to be installed. |
| USER_INPUT_CERT_PW_1 {password needed if CHOSEN_INSTALL_SET = agent or CHOSEN_INSTALL_SET = agentSRA; should be equal to USER_INPUT_CERT_PW_2} | Use this variable to input the SSL certificate password that will be generated during the install. |
| USER_INPUT_RESULTS_START_1 {this variable is needed to start the services installed; it should be equal to Start RPM Services?} | Use this variable to start the HP Rack and Power Manager service. |

Example 2-11: Silent System Agent Installation

```

INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agent
USER_INSTALL_DIR = S:\\HPRPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_RESULTS_START_1 = Start RPM Services?

```

Example 2-12: Silent System Agent and Serial Relay Agent Installation

```

INSTALLER_UI = silent
CHOSEN_INSTALL_SET = agentSRA
USER_INSTALL_DIR = S:\\HPRPM
USER_INPUT_CERT_PW_1 = Admin
USER_INPUT_RESULTS_START_1 = Start CRPM Services?

```

After saving the text file, run the installer by entering *<path to install executable> -f <path to properties file>* at the command prompt. For example, if the install executable (INSTALL.EXE) is in the directory c:/hprpm and the properties file (INSTALL.PROP) is in the directory c:/docs, from a command prompt at c:/hprpm, enter:

```
INSTALL.EXE -f C:/DOCS/INSTALL.PROP
```


Uninstalling Components from Windows Systems

To remove HP Rack and Power Manager from a Windows system:

NOTE: If multiple components are installed, the uninstaller will remove all of the installed components. It might be necessary to reinstall any component still needed.

1. Click **Start**, select **Settings**, and click **Control Panel**.
2. Click **Add/Remove Programs**.
3. Select **HP Rack and Power Manager**.
4. Click **Change/Remove**. The Uninstall HP Rack and Power Manager screen appears.
5. Click **Uninstall**. The Uninstall Complete screen appears.
6. Click **Done**.

NOTE: If you created icons for HP Rack and Power Manager during the Management Server installation, you can initiate the uninstaller by double-clicking the **Uninstall HP Rack and Power Manager** icon.

Uninstalling Components from Linux Systems

NOTE: If multiple components are installed, the uninstaller will remove all of the installed components. It might be necessary to reinstall any component still needed.

To remove HP Rack and Power Manager from a Linux system, run the following command:

```
UninstallRPM
```

Uninstalling Components from NetWare Systems

To remove HP Rack and Power Manager from a NetWare system:

NOTE: If multiple components are installed, the uninstaller will remove all of the installed components. It might be necessary to reinstall any component still needed.

1. From the NetWare Server, run the following console command:

```
NWCRPMUN.NCF
```

This will unload all HP Rack and Power Manager components. Press any key to close the console.

2. From the Windows workstation running the Novell Client, browse to the directory in to which the HP Rack and Power Manager components were installed. From the UninstallerData folder, run `UninstallCRPM.exe`.

The Uninstall HP Rack and Power Manager screen appears.

3. Click **Uninstall**. The Uninstall Complete screen appears.
4. Click **Quit**.

Access and Navigation

Browsing to HP Rack and Power Manager

You can browse to HP Rack and Power Manager in the following ways:

- Remotely from a browser
- Locally from the desktop

IMPORTANT: For security reasons, do not use the Favorites (bookmark) feature of your browser to mark a sublevel URL that is part of HP Rack and Power Manager. In addition, linking to a subsection of HP Rack and Power Manager without going to the main URL could result in unexpected page layout.

NOTE: When browsing to HP Rack and Power Manager remotely or locally for the first time, a Windows Management Server automatically installs the Java Plug-in on the system.

NOTE: A Linux Management Server is unable to update the Java Plug-in on a remote browser. The remote browser will have to be updated manually. Refer to “Browser Requirements” in Chapter 2 for the correct Java Plug-in version for your browser.

Browsing Remotely

1. Launch a supported browser. The browser window appears.
2. In the Address field (Microsoft Internet Explorer) or the Location field (Mozilla), enter
`https://hostname:3257/`
where *hostname* is the IP address or the machine name of the computer on which the Management Server software component is installed.

NOTE: For more information regarding port numbers used by HP Rack and Power Manager, refer to Appendix E in this guide.

NOTE: If you are using a proxy server, you might need to add the server hosting HP Rack and Power Manager to the No Proxy list of servers in the Internet settings for your browser. Refer to the browser help for more information about changing the configuration.

Browsing Locally

HP Rack and Power Manager can be launched locally on a Windows system in a number of ways depending on your selections during the Management Server installation:

- Program Group—Click **Start**, select **Programs**, and select the **HP Rack and Power Manager** Program Group. Click **HP Rack and Power Manager**.
- Start Menu—Click **Start**, and select **HP Rack and Power Manager**.
- Desktop Icon—Double-click the **HP Rack and Power Manager** icon on the desktop.
- Other—Double-click the **HP Rack and Power Manager** link located in a specified folder on the hard drive.

To launch HP Rack and Power Manager locally on a Linux system:

- Create a shortcut to HP Rack and Power Manager on the desktop. For information on creating shortcuts, refer to the operating system documentation.
- In the Location field of the Mozilla browser, enter
`https://hostname:3257/`
where *hostname* is the IP address or the machine name of the computer on which the Management Server software component is installed.

NOTE: For more information regarding port numbers used by HP Rack and Power Manager, refer to Appendix E in this guide.

NOTE: If you are using a proxy server, you might need to add the server hosting HP Rack and Power Manager to the No Proxy list of servers in the Internet settings for your browser. Refer to the browser help for more information about changing the configuration.

Regarding the Browser Security Alert

Browsing to HP Rack and Power Manager requires the use of SSL. SSL is a protocol layer that lies between HTTP and TCP. It provides secure communication between a server and a client and is designed to provide privacy and message integrity. SSL is commonly used in Web-based transactions to authenticate the Web server, which indisputably identifies the server to the browser. SSL also provides an encrypted channel of communication between the server and the browser. This ensures integrity of the data between the Web server and the browser, so that data can neither be viewed nor modified while in transit. HP Rack and Power Manager uses SSL for all browser-to-HP Rack and Power Manager communication.

An integral part of SSL is a security certificate, which identifies the HP Rack and Power Manager Management Server. Your browser might display a security alert when browsing to HP Rack and Power Manager for one of several reasons:

- The certificate is untrusted, meaning it was signed by a certifying authority that is unknown to your browser.
- The certificate has expired or is not yet valid. This can occur if you issue your own certificate and it has expired.
- The name on the certificate does not match the name of the site in the browser address field.

Establishing a Secure Session for Internet Explorer

The first time you browse to HP Rack and Power Manager, the Secure Session screen appears. To ensure a secure connection to HP Rack and Power Manager, verify that you are browsing to the desired Management Server.

1. Click **View Certificate**.
2. Verify that the name in the Issued To field is the name of the Management Server.
3. Perform any other steps necessary to verify the identity of the Management Server.



CAUTION: If you are not sure this is the desired Management Server, do not proceed. Importing a certificate from an unauthorized server relays your login credentials to that unauthorized server. Exit the certificate window and contact the HP Rack and Power Manager administrator.

After verifying the Management Server, do one of the following.

- Import the certificate and proceed.
 - a. Click **View Certificate**. The certificate appears.
 - b. Click **Install Certificate**. The Certificate Import Wizard runs.
 - c. Click **Next**. The Certificate Store screen appears.
 - d. Select **Automatically select the certificate store based on the type of certificate**, and click **Next**.

- e. Click **Finish**. A message appears, asking for verification of the root store.
- f. Click **Yes**.
- Proceed without importing the certificate by clicking **Yes** on the Security Alert window. You will continue to receive the Security Alert each time you log in until you import the certificate. Your data will still be encrypted.
- Exit and import the certificate into your browser from a file provided by the administrator.
 - a. Click **No** on the Security Alert window.
 - b. Obtain an exported HP Rack and Power Manager server certificate file from the administrator.
 - c. Manually import the file into the browser by clicking **Tools>Internet Options>Content>Certificates>Import**.

Establishing a Secure Session for Mozilla

The first time you browse to HP Rack and Power Manager, the Secure Session screen appears. To ensure a secure connection to HP Rack and Power Manager, verify that you are browsing to the desired Management Server.

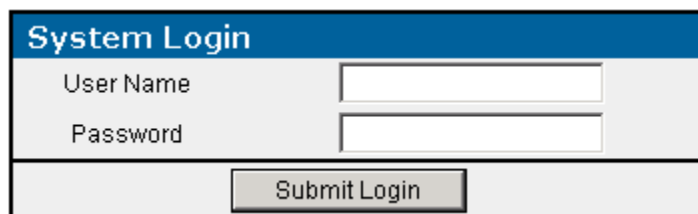
1. Click **Examine Certificate**.
2. Verify that the name in the Issued To field is the name or IP address of your Management Server.
3. Perform any other steps necessary to verify the identity of the Management Server.
4. After verifying the Management Server, do one of the following:
 - a. Click either **Accept this certificate permanently** or **Accept this certificate temporarily for this session**.
 - b. Click **OK**.

NOTE: The certificate can be manually imported by clicking **File>Preferences>Certificates>Privacy & Security>Manage Certificates>Authorities>Import** on the browser window.

Logging Into HP Rack and Power Manager

Before using HP Rack and Power Manager, you must log in with a user name and password. The first time you log in, enter **admin** as the user name and enter the password you selected during the Management Server installation. Click **Submit Login** to log in.

NOTE: User names and passwords are case-sensitive.

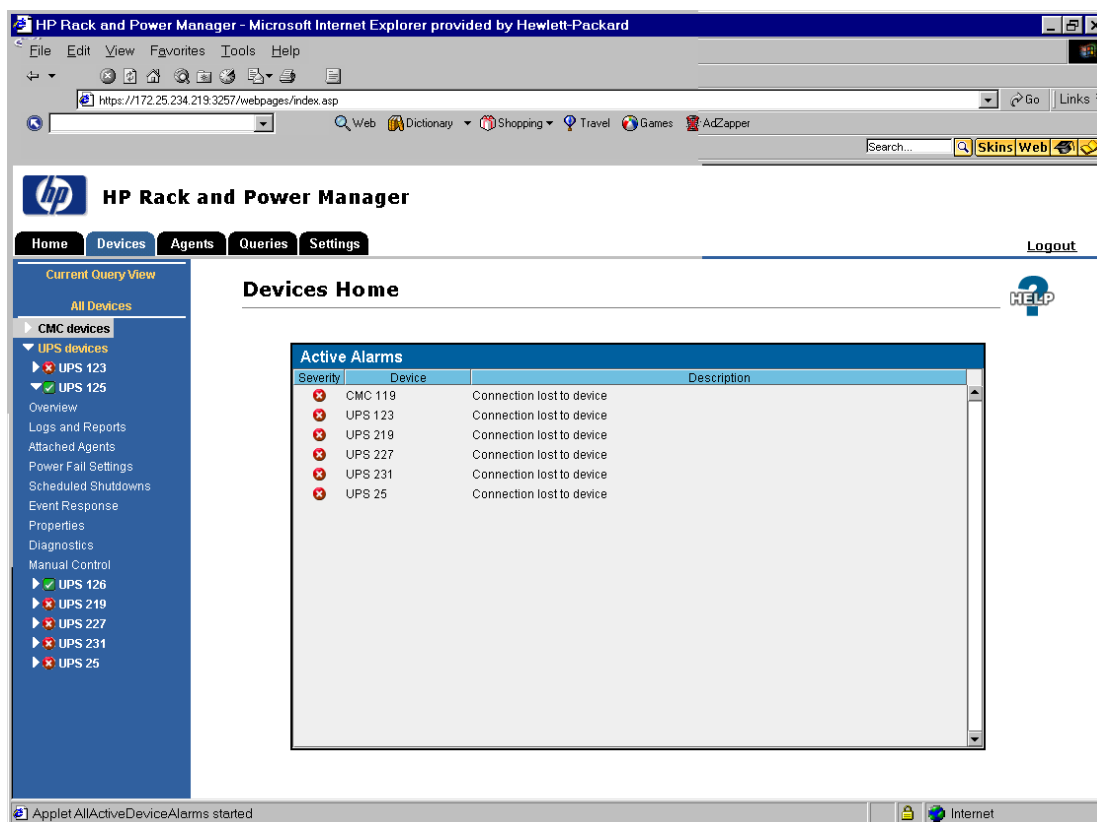


The image shows a 'System Login' form with a blue header. It contains two input fields: 'User Name' and 'Password'. Below these fields is a 'Submit Login' button.

The first time you log in, a screen containing introductory information appears. For subsequent logins, the HP Rack and Power Manager Home screen appears for administrator level users. For more information on the Home screen, refer to “Home Screen” in Chapter 5.

After you are logged in, you can change the user name and password. Refer to “My Account Screen” in Chapter 4 for more information.

Navigating HP Rack and Power Manager



The image shows the HP Rack and Power Manager Home screen in a Microsoft Internet Explorer browser window. The browser title is 'HP Rack and Power Manager - Microsoft Internet Explorer provided by Hewlett-Packard'. The address bar shows 'https://172.25.234.219:3257/webpages/index.asp'. The page has a blue header with the HP logo and the title 'HP Rack and Power Manager'. Below the header is a navigation bar with tabs: 'Home', 'Devices', 'Agents', 'Queries', and 'Settings'. The 'Home' tab is selected. On the right side of the navigation bar is a 'Logout' link. The main content area is titled 'Devices Home' and features a 'Current Query View' section. On the left side of the main content area is a tree view showing the hierarchy of devices. The tree view is expanded to show 'CMC devices' and 'UPS devices'. Under 'UPS devices', there are several items: 'UPS 123' (with a red X icon), 'UPS 125' (with a green checkmark icon), 'Overview', 'Logs and Reports', 'Attached Agents', 'Power Fail Settings', 'Scheduled Shutdowns', 'Event Response', 'Properties', 'Diagnostics', and 'Manual Control'. The 'UPS 126' item is also visible under 'Manual Control'. The main content area displays a table titled 'Active Alarms'. The table has three columns: 'Severity', 'Device', and 'Description'. The table contains six rows of data, all with a red X icon in the 'Severity' column and the text 'Connection lost to device' in the 'Description' column.

| Severity | Device | Description |
|----------|---------|---------------------------|
| X | CMC 119 | Connection lost to device |
| X | UPS 123 | Connection lost to device |
| X | UPS 219 | Connection lost to device |
| X | UPS 227 | Connection lost to device |
| X | UPS 231 | Connection lost to device |
| X | UPS 25 | Connection lost to device |

The HP Rack and Power Manager interface is divided into three frames:

- **Top frame**—Contains the title, a Home tab, a Devices tab, an Agents tab, a Queries tab, a Settings tab, an HP Logo icon, and a Logout link.
 - Click the **Home** tab to view the Home screen. For more information, refer to “Home Screen” in Chapter 5.
 - Click the **Devices** tab to view a list of hyperlinks to managed devices. For more information on the Devices menu, refer to Chapter 5.
 - Click the **Agents** tab to view the Agent Management screen. For more information on managing agents, refer to “Agent Management Screen” in chapter 4.
 - Click the **Queries** tab to display the Queries screen. For more information on queries, refer to “Queries Screen” in Chapter 5.
 - Click the **Settings** tab to view a list of hyperlinks to the settings screens. For more information on the Settings menu, refer to Chapter 4.
 - Click the **HP Logo** icon to connect to the HP website.
 - Click the **Logout** link to log out of HP Rack and Power Manager.

IMPORTANT: In the center of the left navigation frame, the name of the current query view appears. Only devices included in the current query appear in the list of managed devices.

- **Left navigation frame**—Contains a list of managed devices or a list of hyperlinks for configuring the HP Rack and Power Manager settings. View submenus for each option by clicking the arrow on the left of the option to expand the menu.
- **Main frame**—Contains the various screens of HP Rack and Power Manager, which are discussed in detail later in this guide. Click the **Help** icon on any screen in the main frame to display the HP Rack and Power Manager online help.

NOTE: By default, the Home screen appears in the main frame upon logging in to HP Rack and Power Manager.

Before HP Rack and Power Manager can manage devices, the HP Rack and Power Manager settings must be properly configured. To view a list of hyperlinks for configuring HP Rack and Power Manager settings, click the **Settings** icon in the top frame of the HP Rack and Power Manager interface. The available options appear in the left navigation frame.

Settings Tab

Hyperlinks listed under the Settings tab include:

- Discovery
 - Automatic
 - Manual
 - Discovery Results
- Configuration
 - Device Management
 - Agent Management
- Accounts
 - User Administration
 - My Account
- Server
 - Notification Recipients
 - Session Management
 - System Logs
 - Database
 - Email Server Setup
 - Configuration
 - About RPM

NOTE: Users that do not have administrator rights can only access the My Account screen under the Settings icon. Administrators have access to all settings screens.

Automatic Discovery Screen

The Automatic Discovery screen is only displayed for users who have administrator rights. Automatic discovery is the process that HP Rack and Power Manager uses to locate and identify devices (UPSs and CMCs) and System Agents on the network. Devices and agents must first be discovered before they can be managed.

The Automatic Discovery screen enables you to configure HP Rack and Power Manager to automatically discover devices and agents according to a schedule.

NOTE: Discovered devices and agents appear on the Discovery Results screen.

To configure automatic discovery:

1. Add a new range of IP addresses to search.
 - a. Click **Add New IP Range**. The Add/Edit IP Range box appears.

| Add / Edit IP Range | | | | | | | | | | | | | | |
|--|----------------------|---|----|---|-------------------|---|----|---|---------|----------|----|---|----|---------|
| Description | Beginning IP Address | | | | Ending IP Address | | | | Retries | Timeouts | | | | |
| Medford Office | 172 | . | 25 | . | 234 | . | 25 | . | 234 | . | 99 | 3 | 10 | seconds |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> <input type="button" value="Cancel"/> | | | | | | | | | | | | | | |

- b. Enter a description for the IP address range in the Description field.
 - c. Enter the beginning and ending IP address for the range.

NOTE: The beginning IP address must be a lower value than the ending IP address.

- d. Enter the number of times you want the timeout process to repeat in the Retries field. If the retries value equals zero, the system only sends the initial broadcast message. If the retries setting is greater than zero, more than one discovery request is made. Additional requests seek new devices that were not previously discovered.

NOTE: If the discovery is unsuccessful, your network might be too large for the retries value set on the Add/Edit IP Range box. Increase the retries value.

- e. Enter the amount of time the system should wait for responses during discovery in the Timeouts field. The timeout setting you choose must be adequate for your network. To ensure that enough time is available to discover all devices, be sure to take into account network traffic and network latency when selecting a timeout value.

NOTE: If the discovery is unsuccessful, your network may be too large for the timeout value set on the Add/Edit IP Range box. Increase the timeout value.

2. Click **Apply** to accept the information. Enable automatic discovery by selecting **Enable Automatic Discovery** in the Status box.

| Status |
|--|
| <input checked="" type="checkbox"/> Enable Automatic Discovery Last run: Tuesday August 20 2002 at 12:40 PM Next run: |

- Schedule automatic discoveries by entering the number of days, hours, or minutes that should elapse between each automatic discovery in the Schedule box.

| Schedule | | |
|--|--------------------------------|--------------------------------|
| Automatically Execute Discovery Every: | | |
| day(s) | hour(s) | minute(s) |
| <input type="text" value="1"/> | <input type="text" value="0"/> | <input type="text" value="0"/> |

- Enter the SNMP Community Strings, separated by commas, that HP Rack and Power Manager should use to discover CMC devices (`public` is the default string). If you have not changed the default strings on any devices, this step is optional.

NOTE: Community strings are case-sensitive.

| Use Community Strings (optional) | |
|--------------------------------------|--|
| Use These SNMP Strings for Discovery | <input type="text" value="public"/> (comma separated list) |

- Specify the IP address range or ranges for HP Rack and Power Manager to use in discovery by selecting the checkbox in the Use column next to the range you want to use in the IP Address Ranges table. Only devices and agents within the specified ranges are discovered.

| IP Address Ranges | | | | | | |
|--|--------------------------------------|--------------|----------------|---------|----------|--------------------------|
| Use | Description | Beginning IP | Ending IP | Retries | Timeouts | Delete |
| <input type="checkbox"/> | houston ip addresses | 172.25.234.1 | 172.25.234.255 | 3 | 10 sec | <input type="checkbox"/> |
| <input type="button" value="Apply"/> <input type="button" value="Execute Discovery Now"/> <input type="button" value="Undo Changes"/> <input type="button" value="Add New IP Range"/> <input type="button" value="Delete Selected IP Range(s)"/> | | | | | | |

- Do one of the following:
 - Click **Apply** to accept the information and schedule future automatic discoveries.
 - Click **Execute Discovery Now** to perform an immediate discovery and schedule future automatic discoveries.
 - Click **Undo Changes** to reject all changes and keep the Automatic Discovery screen open.

To edit an IP address range:

- Click the hyperlink for the IP address range you want to edit in the Description column of the IP Address Ranges table. The Add/Edit IP Range box appears.
- Edit the information as necessary.
- Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit IP Range box open, or click **Cancel** to return to the Automatic Discovery screen.

To delete an IP address range:

1. Select the checkbox in the Delete column of the IP Address Ranges table for the IP address range you want to delete.
2. Click **Delete Selected IP Range(s)**.

Manual Discovery Screen

The Manual Discovery screen is only displayed for users who have administrator rights. The Manual Discovery screen enables you to manually discover devices (UPSs and CMCs) and agents (System Agents) on your network without scheduling automatic discoveries.

NOTE: Discovered devices and agents appear on the Discovery Results screen.

To manually discover devices:

1. Add a new IP address range if necessary.
 - a. Click **Add New IP Range**. The Add/Edit IP Range box appears.

| Add / Edit IP Range | | | | | | | | | | | | | | | | | |
|--|----------------------|---|----|---|-------------------|---|----|-----|---------|----------|---|-----|---|----|---|----|---------|
| Description | Beginning IP Address | | | | Ending IP Address | | | | Retries | Timeouts | | | | | | | |
| Medford Office | 172 | . | 25 | . | 234 | . | 25 | 172 | . | 25 | . | 234 | . | 99 | 3 | 10 | seconds |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> <input type="button" value="Cancel"/> | | | | | | | | | | | | | | | | | |

- b. Enter a description for the IP address range in the Description field.
- c. Enter the beginning and ending IP address for the range.

NOTE: The beginning IP address must be a lower value than the ending IP address.

- d. Enter the number of times you want the timeout process to repeat in the Retries field. If the retries value equals zero, the system only sends the initial broadcast message. If the retries setting is greater than zero, more than one discovery request is made. Additional requests seek new devices that were not previously discovered.

NOTE: If the discovery is unsuccessful, your network might be too large for the retries value set on the Add/Edit IP Range box. Increase the retries value.

- e. Enter the amount of time the system should wait for responses during discovery in the Timeouts field. The timeout setting you choose must be adequate for your network. To ensure that enough time is available to discover all devices, be sure to take into account network traffic and network latency when selecting a timeout value.

NOTE: If the discovery is unsuccessful, your network might be too large for the timeout value set on the Add/Edit IP Range box. Increase the timeout value.

- f. Click **Apply** to accept the information.

2. Configure the discovery.

- a. Select the type of resource (device or System Agent) you want to manually discover.
- b. Enter the SNMP Community Strings, separated by commas, that HP Rack and Power Manager should use to discover CMC devices (`public` is the default string). If you have not changed the default strings on any devices, this step is optional.

NOTE: Community strings are case-sensitive.

- c. Enter the IP address of a single resource (device or System Agent) that HP Rack and Power Manager needs to discover or select the option to manually discover resources within a range of IP addresses.

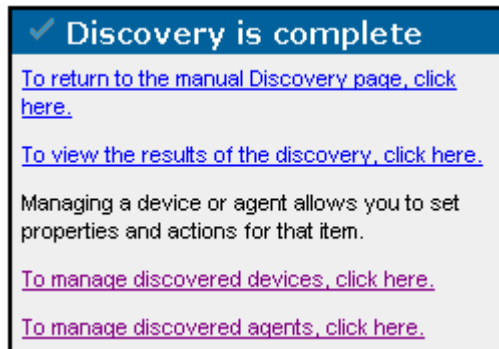
IMPORTANT: Be sure that the correct radio button is selected. For example, if you enter a single IP address but do not have Search at this IP Address selected, discovery will be unsuccessful.

| Discovery Configuration | |
|--|--|
| Select the type of network resources you want to discover | |
| <input type="radio"/> Discover all resources on the network (Recommended) | |
| <input checked="" type="radio"/> Discover individual network resources | |
| <input checked="" type="checkbox"/> Uninterruptible Power System (UPS) Devices | <input checked="" type="checkbox"/> Rack and Power Manager System Agents |
| <input type="checkbox"/> Console Management Controllers (CMCs) | |
| Use Community Strings (optional) | |
| Use These SNMP Strings for Discovery <input type="text"/> (comma separated list) | |
| Select where to search on the network for resources | |
| <input type="radio"/> Search at this IP Address only: <input type="text"/> | |
| <input checked="" type="radio"/> Search for Resources using IP ranges selected from the list below | |

3. Specify the IP address range for HP Rack and Power Manager to use in discovery (if you are using a range of IP addresses for this discovery) by selecting the checkbox in the Use column next to the range you want to use in the IP Address Ranges table. Only devices and agents within the specified ranges are discovered.

| IP Address Ranges | | | | | | |
|--|--------------------------------------|--------------|----------------|---------|----------|--------------------------|
| Use | Description | Beginning IP | Ending IP | Retries | Timeouts | Delete |
| <input checked="" type="checkbox"/> | houston ip addresses | 172.25.234.1 | 172.25.234.255 | 3 | 10 sec | <input type="checkbox"/> |
| <div> <input type="button" value="Execute Discovery Now"/> <input type="button" value="Undo Changes"/> <input type="button" value="Add New IP Range"/> <input type="button" value="Delete Selected IP Range(s)"/> </div> | | | | | | |

4. Click **Undo Changes** to reject all changes and keep the Manual Discovery screen open or click **Execute Discovery Now** to perform an immediate manual discovery. After discovery is complete, the Discovery is complete box appears.



Click the appropriate hyperlink to:

- Return to the Manual Discovery screen. For more information, refer to “Manual Discovery Screen” in this chapter.
- View the results of the discovery. For more information, refer to “Discovery Results Screen” in this chapter.
- Manage discovered devices. For more information, refer to “Device Management Screen” in this chapter.
- Manage discovered agents. For more information, refer to “Agent Management Screen” in this chapter.

To edit an IP address range:

1. Click the hyperlink for the IP address range you want to edit in the Description column of the IP Address Ranges table. The Add/Edit IP Range box appears.
2. Edit the information as necessary.
3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit IP Range box open, or click **Cancel** to return to the Manual Discovery screen.

To delete an IP address range:

1. Select the checkbox in the Delete column of the IP Address Ranges table for the IP address range you want to delete.
2. Click **Delete Selected IP Range(s)**.

Discovery Results Screen

The Discovery Results screen is only displayed for users who have administrator rights. The Discovery Results screen enables you to view the devices and agents discovered by HP Rack and Power Manager.

| Discovered Devices | | | |
|--------------------|----------|----------------|--|
| Device Type | IP Range | IP Address | Delete |
| UPS | all | 172.25.234.25 | <input type="checkbox"/> |
| UPS | all | 172.25.234.33 | <input type="checkbox"/> |
| UPS | all | 172.25.234.121 | <input type="checkbox"/> |
| UPS | all | 172.25.234.126 | <input type="checkbox"/> |
| UPS | all | 172.25.234.234 | <input type="checkbox"/> |
| | | | <input type="button" value="Delete Selection(s)"/> |

| Discovered Agents | | | |
|-------------------|----------------|--|--|
| IP Range | IP Address | | Delete |
| all | 172.25.234.12 | | <input type="checkbox"/> |
| all | 172.25.234.24 | | <input type="checkbox"/> |
| all | 172.25.234.25 | | <input type="checkbox"/> |
| all | 172.25.234.232 | | <input type="checkbox"/> |
| all | 172.25.234.233 | | <input type="checkbox"/> |
| all | 172.25.234.234 | | <input type="checkbox"/> |
| | | | <input type="button" value="Delete Selection(s)"/> |

Keep in mind that:

- If you do not see a device in the discovered list, it was not discovered and is not available to be managed. For troubleshooting discovery, refer to Chapter 6, “Troubleshooting.”
- Discovered devices cannot be worked with until they are added to the managed list on the Device Management screen.
- If a device or agent is added to the managed list on the Device Management screen or Agent Management screen, it will no longer appear on the Discovery Results screen.
- Previously managed devices and agents will not be discovered again unless they are unmanaged and deleted from the Discovery Results screen.

To delete a discovered device:

1. Select the checkbox in the Delete column of the Discovered Devices table for the device you want to delete.
2. Click **Delete Selection(s)**.

To delete a discovered agent:

1. Select the checkbox in the Delete column of the Discovered Agents table for the agent you want to delete.
2. Click **Delete Selection(s)**.

Device Management Screen

The Device Management screen is only displayed for users who have administrator rights. Each device that will be monitored by HP Rack and Power Manager must be included in the Managed Devices table on the Device Management screen.

| Managed Devices | | | | |
|---|----------------|------|----------------|--------------------------|
| Name | IP Address | Type | Location | Delete |
| Rack 34 CMC | 172.25.234.119 | CMC | Medford Office | <input type="checkbox"/> |
| R3000XR Rack 34 | 172.25.234.114 | UPS | Medford Office | <input type="checkbox"/> |
| <div> Add New Device Delete Selection(s) </div> | | | | |

To add a discovered device to the Managed Devices table:

1. Click **Add New Device** on the Managed Devices table. The Add Device to Managed Device List box appears.

| Add Device to Managed Device List | | | |
|--|--------------------|---------------------------|--|
| Add Selected Device | With This Name | At This Location | |
| <input checked="" type="radio"/> This Discovered Device : <div>UPS at 172.25.234.120</div> | <div>R3000XR</div> | <div>Houston Office</div> | |
| <input type="radio"/> <div>UPS</div> device at this IP address : <div></div> | | | |
| <div> Apply Undo Changes Cancel </div> | | | |

2. Select the radio button to the left of the This Discovered Device: dropdown box.
3. Select the device you want to add from the This Discovered Device: dropdown box.

NOTE: Only devices that are listed on the Discovery Results screen are available from the This Discovered Device: dropdown box.

4. Enter a name for the device in the With This Name field.
5. Do one of the following:
 - Select the location of the device from the At This Location dropdown box.
 - Add a new location by selecting **New Location** from the At This Location dropdown box. The Add New Location box appears.

| Add New Location | |
|----------------------------------|---------------------------|
| New Location | <div>Houston Office</div> |
| <div> Add Location Cancel </div> | |

Enter the name of the location in the New Location field. Click **Add Location**. The new location is available in the At This Location dropdown box on the Add Device to Managed Device List box.

6. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add Device to Managed Device List box open, or click **Cancel** to return to the Device Management screen.

Devices can be manually added to the Managed Devices table without being discovered. To add a device that is not discovered:

1. Click **Add New Device** on the Managed Devices table. The Add Device to Managed Device List box appears.

| Add Device to Managed Device List | | |
|--|---------------------------------------|---|
| Add Selected Device | With This Name | At This Location |
| <input type="radio"/> This Discovered Device : <input checked="" type="radio"/> UPS device at this IP address : | <input type="text" value="R12000XR"/> | <input type="text" value="Medford Office"/> |
| <input type="text" value="172.25.234.222"/> | | |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> <input type="button" value="Cancel"/> | | |

2. Select the radio button and the type of device you are adding from the dropdown box in the Add Selected Device column.

IMPORTANT: Be sure to select the correct device type.

3. Enter the IP address of the device you want to add in the Add Selected Device column.
4. Enter a name for the device in the With This Name field.
5. Do one of the following:
 - Select the location of the device from the At This Location dropdown box.
 - Add a new location by selecting **New Location** from the At This Location dropdown box. The Add New Location box appears.

Enter the name of the location in the New Location field. Click **Add Location**. The new location is available in the At This Location dropdown box on the Add Device to Managed Device List box.
6. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add Device to Managed Device List box open, or click **Cancel** to return to the Device Management screen.

To delete a managed device:

1. Select the checkbox in the Delete column of the Managed Devices table for the device you want to remove.
2. Click **Delete Selection(s)**.

NOTE: When you delete a device from the Managed Devices table, the device is relisted on the Discovery Results screen.

To edit a managed device:

1. Click the **Devices** icon in the top frame. Click the hyperlink for the device you want to edit in the left navigation frame. Click the **Properties** hyperlink. The properties screen for the device appears.

| UPS Properties | |
|--|--------------------------------------|
| Parameters | Settings |
| Device Name | <input type="text" value="UPS 125"/> |
| Device Location | <input type="text" value="Houston"/> |
| UPS Model | COMPAQ UPS |
| Part Number | This is a test |
| Serial Number | TT122A1538 |
| Contact Information | <input type="text"/> |
| Power Rating (in VA) | 2900 |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> | |

2. Edit the information as necessary.
3. Click **Apply** to accept the information, or click **Undo Changes** to reject all changes and keep the properties screen open.

Agent Management Screen

The Agent Management screen is only displayed for users who have administrator rights. Each agent that will be monitored by HP Rack and Power Manager must be included in the Managed Agents table on the Agent Management screen.

| Managed Agents | | | |
|---|----------------|----------|--------------------------|
| Name | IP address | Location | Delete |
| Agent 12 | 172.25.234.12 | Houston | <input type="checkbox"/> |
| Agent 215 | 172.25.234.215 | Houston | <input type="checkbox"/> |
| Agent 219 | 172.25.234.219 | Houston | <input type="checkbox"/> |
| Agent 22 | 172.25.234.22 | Houston | <input type="checkbox"/> |
| Agent 221 | 172.25.234.221 | Houston | <input type="checkbox"/> |
| Agent 224 | 172.25.234.224 | Houston | <input type="checkbox"/> |
| Agent 225 | 172.25.234.225 | Houston | <input type="checkbox"/> |
| Agent 227 | 172.25.234.227 | Houston | <input type="checkbox"/> |
| Agent 229 | 172.25.234.229 | Houston | <input type="checkbox"/> |
| Agent 23 | 172.25.234.23 | Houston | <input type="checkbox"/> |
| Agent 230 | 172.25.234.230 | Houston | <input type="checkbox"/> |
| <input type="button" value="Add New Agent"/> <input type="button" value="Delete Selection(s)"/> | | | |

To add a discovered agent to the Managed Agents table:

1. Click **Add New Agent** on the Managed Agents table. The Add Agent to Managed List box appears.

| Add Agent to Managed List | | | | | |
|--|--------------------|----------------|---------------------------|-----|----------|
| | Add Selected Agent | With This Name | At This Location | O/S | Function |
| <input type="radio"/> This Discovered Agent : | 172.25.234.210 | | -----Select Location----- | | |
| <input type="radio"/> New Agent at this IP address : | | | | | |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> <input type="button" value="Cancel"/> | | | | | |

2. Select the radio button to the left of the This Discovered Agent: dropdown box.
 3. Select the IP address for the agent you want to add from the This Discovered Agent: dropdown box.
- NOTE:** Only agents that are listed on the Discovery Results screen are available from the This Discovered Agent: dropdown box.
4. Enter a name for the agent in the With This Name field.
 5. Do one of the following:
 - Select the location of the agent from the At This Location dropdown box.
 - Add a new location by selecting **New Location** from the At This Location dropdown box. The Add New Location box appears.

| Add New Location | |
|---|----------------|
| New Location | Houston Office |
| <input type="button" value="Add Location"/> <input type="button" value="Cancel"/> | |

Enter the name of the location in the New Location field. Click **Add Location**. The new location is available in the At This Location dropdown box on the Add Agent to Managed List box.

6. Enter the operating system the agent is running on in the O/S field.
7. Enter the function that this system performs in the Function field.
8. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add Agent to Managed List box open, or click **Cancel** to return to the Agent Management screen.

Agents can be manually added to the Managed Agents table before being discovered. To add an agent that is not discovered:

1. Click **Add New Agent** on the Managed Agents table. The Add Agent to Managed List box appears.

| Add Agent to Managed List | | | | | | |
|---------------------------|--------------------------------|----------------|------------------|---------------------------|----------|--------------|
| | Add Selected Agent | With This Name | At This Location | O/S | Function | |
| <input type="radio"/> | This Discovered Agent : | 172.25.234.210 | | -----Select Location----- | | |
| <input type="radio"/> | New Agent at this IP address : | | | | | |
| | | | | | Apply | Undo Changes |
| | | | | | Cancel | |

2. Select the radio button to the left of the New Agent at this IP address: field.
3. Enter the IP address of the agent you want to add in the New Agent at this IP address: field.
4. Enter a name for the agent in the With This Name field.
5. Select the location of the agent from the At This Location dropdown box.
6. Enter the operating system the agent is running on in the O/S field.
7. Enter the function that this system performs in the Function field.
8. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add Agent to Managed List box open, or click **Cancel** to return to the Agent Management screen.

To edit a managed agent:

1. Click the hyperlink for the agent you want to edit in the Name column of the Managed Agents table. The Edit Agent box appears.

| Edit Agent | | | |
|----------------|----------------|--------|--------------|
| Name | Location | O/S | Function |
| Proliant DL580 | Houston Office | Linux | Mail Server |
| | | Apply | Undo Changes |
| | | Cancel | |

2. Edit the information as necessary.
3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Edit Agent box open, or click **Cancel** to return to the Agent Management screen.

To delete a managed agent:

1. Select the checkbox in the Delete column of the Managed Agents table for the agent you want to remove.
2. Click **Delete Selection(s)**.

NOTE: When you delete an agent from the Managed Agents table, the agent is relisted on the Discovery Results screen.

User Administration Screen

The User Administration screen is only displayed for users who have administrator rights. The System Users table on the User Administration screen enables you to add new users, view information about all users with access to HP Rack and Power Manager, and delete users.

| System Users | | | | |
|--------------|--------------------------|--|----------------------------------|--------------------------|
| Disabled | Logon Name | User Type | Last Logon | Delete |
| | admin | Admin | Thursday August 22 2002 at 14:20 | <input type="checkbox"/> |
| | LLWicker | User | Thursday August 22 2002 at 14:10 | <input type="checkbox"/> |
| | RKing | Admin | Thursday August 22 2002 at 14:20 | <input type="checkbox"/> |
| | | <input type="button" value="Add New User"/> <input type="button" value="Delete Selection(s)"/> | | |

To add a new user and assign user rights:

1. Click **Add New User**. The Account Detail and Device Access Profile tables appear.

| Account Detail | | | | |
|-------------------------------------|--|--|-----------------------------------|--------------------------------|
| Login Name | Password | Verify Password | Disable Account | Admin |
| <input type="text" value="Dacook"/> | <input type="password" value="*****"/> | <input type="password" value="*****"/> | <input type="checkbox"/> Disabled | <input type="checkbox"/> Admin |

| Device Access Profile | | | | Default User Access Rights for All New Devices : |
|-----------------------|--------------|----------|----------------|--|
| Device Type | Name | Location | IP Address | Access Rights |
| UPS | R1500XR SNMP | Rack 3 | 172.25.234.130 | <input checked="" type="radio"/> No Access <input type="radio"/> Read Only <input type="radio"/> Read/Write |
| UPS | R3000XR SNMP | Rack 4 | 172.25.234.110 | <input checked="" type="radio"/> No Access <input type="radio"/> Read Only <input type="radio"/> Read/Write |
| UPS | T2200XR SRA | Rack 1 | 172.25.234.13 | <input checked="" type="radio"/> No Access <input type="radio"/> Read Only <input type="radio"/> Read/Write |
| | | | | <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> <input type="button" value="Cancel"/> |

2. Enter the user's logon name in the Logon Name field.
3. Enter the user's password in the Password field.
4. Reenter the user's password in the Verify Password field.
5. Select the checkbox in the Admin column if the user has administrator rights.

NOTE: Only administrators have the ability to discover and manage devices.

6. Select the user's default access rights for all new devices from the Default User Access Rights for All New Devices: dropdown box, and click **Set**.
 - Read/Write—Allows the user to log in to HP Rack and Power Manager and have Read/Write access to already discovered and managed devices
 - Read Only—Allows the user to log in to HP Rack and Power Manager and view devices that are already discovered and managed (the user cannot make changes to device settings)
 - No Access—Allows the user to log in to HP Rack and Power Manager but does not allow the user to view devices to which they have No Access rights assigned

7. Select the appropriate radio buttons in the Access Rights column for each managed device.
8. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the table open, or click **Cancel** to return to the User Administration screen.

To edit a user profile:

1. Click the hyperlink for the user profile you want to edit in the Logon Name column of the System Users table. The Account Detail and Device Access Profile tables for that user appear.
2. Edit the information as necessary.
3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the table open, or click **Cancel** to return to the User Administration screen.

To delete a user profile:

1. Select the checkbox in the Delete column of the System Users table for the profile you want to remove.
2. Click **Delete Selection(s)**.

To disable a user's account without deleting it:

1. Click the hyperlink for the user profile you want to disable in the Logon Name column of the System Users table. The Account Detail and Device Access Profile tables for that user appear.
2. Select the checkbox in the Disable Account column to disable the account.
3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the table open, or click **Cancel** to return to the User Administration screen.

My Account Screen

The Device Access Profile table on the My Account screen displays your device access profile and enables you to change your login password.

| Device Access Profile | | | | |
|-----------------------|---------|----------|----------------|-----------------|
| Device Type | Name | Location | IP Address | Access Rights |
| CMC | CMC 119 | Houston | 172.25.234.119 | Read / Write |
| CMC | CMC 205 | Houston | 172.25.234.205 | Read / Write |
| CMC | CMC 94 | Houston | 172.25.234.94 | Read / Write |
| CMC | CMC 96 | Houston | 172.25.234.96 | Read / Write |
| UPS | UPS 123 | Houston | 172.25.234.123 | Read / Write |
| UPS | UPS 125 | Houston | 172.25.234.125 | Read / Write |
| UPS | UPS 126 | Houston | 172.25.234.126 | Read / Write |
| UPS | UPS 219 | Houston | 172.25.234.219 | Read / Write |
| UPS | UPS 227 | Houston | 172.25.234.227 | Read / Write |
| UPS | UPS 231 | Houston | 172.25.234.231 | Read / Write |
| UPS | UPS 25 | Houston | 172.25.234.25 | Read / Write |
| | | | | Change Password |

To change your password:

1. Click **Change Password**. The Change Password box appears.



The Change Password dialog box has a blue header with the text "Change Password". Below the header are three text input fields labeled "Old Password", "New Password", and "Confirm Password". At the bottom of the dialog are two buttons: "Apply" and "Cancel".

2. Enter your current password in the Old Password field.
3. Enter the new password in the New Password field. A password can be between 1 and 50 characters in length. The characters can be alphabetic, numeric, or both. Passwords are case-sensitive.
4. Reenter the new password in the Confirm Password field.
5. Click **Apply** to accept the information, or click **Cancel** to reject all changes.

Notification Recipients Screen

The Notification Recipients screen is only displayed for users who have administrator rights. The Notification Recipients screen enables you to set up distribution lists to be used to send e-mail/paging, broadcast, and SNMP trap alerts.

Email/Paging Tab

The Email/Paging tab enables you to set up e-mail distribution lists for HP Rack and Power Manager to recognize. You can set up recognized e-mail addresses to receive alerts when various alarm conditions occur, using the Event Response screens for CMCs and UPSs.

| Email / Paging | | Broadcast | SNMP Traps |
|--|---|--------------------------|------------|
| Recipient List | Email Address(es) | Delete | |
| Houston | dc@houcampus.com | <input type="checkbox"/> | |
| Houston Administrators | dc@houadmin.com ■ rk@houadmin.com ■ ms@houadmin.com | <input type="checkbox"/> | |
| Add New Email/Paging Recipient List | | Delete Selection(s) | |

To set up a recipient list for e-mail alerts:

1. Configure HP Rack and Power Manager to send e-mail using the Email Server Setup screen. Refer to “Email Server Setup Screen” in this chapter. If HP Rack and Power Manager is already configured to send e-mail, go to step 2.
2. Click **Add New Email/Paging Recipient List**. The Email/Paging Recipient(s) box appears.

| Email/Paging Recipient(s) | |
|--|-------------------|
| Recipient List | |
| Houston Administrators | |
| Email Address(es) | Email Address(es) |
| rk@houadmin.com | gb@houadmin.com |
| jm@houadmin.com | pn@houadmin.com |
| ms@houadmin.com | bs@houadmin.com |
| dc@houadmin.com | |
| tb@houadmin.com | |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> <input type="button" value="Issue Test Email"/> <input type="button" value="Cancel"/> | |

3. Enter the name of the recipient or group of recipients in the Recipient List field.
4. Enter a valid e-mail address for each recipient (up to 10 addresses) in the Email Address(es) fields.
5. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Email/Paging Recipient(s) box open, click **Issue Test Email** to send a test e-mail, or click **Cancel** to return to the Email/Paging tab.

To edit a recipient on the e-mail/paging list:

1. Click the hyperlink for the recipient you want to edit in the Recipient List column of the Email/Paging tab. The Email/Paging Recipient(s) box appears.
2. Edit the information as necessary.
3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Email/Paging Recipient(s) box open, click **Issue Test Email** to send a test e-mail, or click **Cancel** to return to the Email/Paging tab.

To delete a recipient from the e-mail/paging list:

1. Select the checkbox in the Delete column of the Email/Paging tab for the recipient or group of recipients you want to delete.
2. Click **Delete Selection(s)**.

Broadcast Tab

The Broadcast tab enables you to set up broadcast distribution lists for HP Rack and Power Manager to recognize. You can set up recognized IP addresses to receive broadcast alerts when various alarm conditions occur, using the Event Response screens for CMCs and UPSs.

IMPORTANT: Any computer running Linux that will be sending or receiving broadcasts must have the Samba packages installed, configured, and running. If the computer running Linux is to receive broadcasts, Samba must be told how to display the received message by adding a message command statement to the Global Settings section of the `SMB . CONF` file, such as the following:

```
message command = /bin/csh -c 'cat %s | wall; rm %s' &
```

This statement tells Samba to route the broadcast message to the `wall` command, which will display the message on the system (either in a terminal window, at the console, or in a popup message, depending on the display environment), then delete the message. The Samba processes must be restarted after editing the `SMB . CONF` file to enable the changes. For more information, refer to the Samba documentation at <http://www.samba.org>.

In addition, for a Linux Management Server to send broadcasts to either Windows systems, Linux systems, or both, entries must be added to the `/etc/hosts` file on the Management Server for each host name to which it will broadcast.

For example, to broadcast from a Linux Management Server to a Windows workstation named "george" at IP address 143.85.41.121, add the following line to the `hosts` file:

```
143.85.41.121    george
```

| Email / Paging | | Broadcast | SNMP Traps |
|--|---------------------------------|--------------------------|------------|
| Recipient List | IP Address(es) | Delete | |
| Houston Administrators | 172.25.234.119 ■ 172.25.234.219 | <input type="checkbox"/> | |
| Add New Broadcast Recipient List | | Delete Selection(s) | |

To set up a recipient list for broadcast alerts:

1. Click **Add New Broadcast Recipient List**. The Broadcast Recipient(s) box appears.

| Broadcast Recipient(s) | | | |
|------------------------|----------------|-------|----------------|
| Recipient List | | | |
| Houston Administrators | | | |
| Name | IP / Host Name | Name | IP / Host Name |
| Gus | 172.25.234.89 | Royal | 172.25.234.101 |
| Timm | 172.25.234.200 | Mark | 172.25.234.254 |
| Peter | 172.25.234.230 | | |
| Brian | 172.25.234.140 | | |
| Darrick | 172.25.234.240 | | |

2. Enter the name of the recipient or group of recipients in the Recipient List field.
3. Enter the name of each recipient (up to 10 names) in the Name fields.
4. Enter a valid Host Name for each named recipient in the IP/Host Name fields.

NOTE: If the Management Server is running Windows 2000, you can enter an IP address instead of a Host Name.

5. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Broadcast Recipient(s) box open, click **Issue Test Broadcast** to send a test broadcast, or click **Cancel** to return to the Broadcast tab.

To edit a recipient on the broadcast list:

1. Click the hyperlink for the recipient you want to edit in the Recipient List column of the Broadcast tab. The Broadcast Recipient(s) box appears.
2. Edit the information as necessary.
3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Broadcast Recipient(s) box open, click **Issue Test Broadcast** to send a test broadcast, or click **Cancel** to return to the Broadcast tab.

To delete a recipient from the broadcast list:

1. Select the checkbox in the Delete column of the Broadcast tab for the recipient or group of recipients you want to delete.
2. Click **Delete Selection(s)**.

SNMP Traps Tab

The SNMP Traps tab enables you to set up SNMP trap distribution lists for HP Rack and Power Manager to recognize. You can set up recognized IP addresses to receive alerts when various alarm conditions occur, using the Event Response screens for CMCs and UPSs.

For additional information on sending traps to HP Systems Insight Manager and HP Insight Manager 7, refer to Appendix B and Appendix C of this guide.

| Email / Paging | Broadcast | SNMP Traps |
|--|-----------|--|
| Recipient List IP Address(es) | | Delete |
| Houston Administrators 172.25.234.119 ■ 172.25.234.219 | | <input type="checkbox"/> |
| <input type="button" value="Add New SNMP Recipient List"/> | | <input type="button" value="Delete Selection(s)"/> |

To set up a recipient list for SNMP traps:

1. Click **Add New SNMP Recipient List**. The SNMP Recipients box appears.

| SNMP Recipients | | | |
|------------------------|----------------|------|------------|
| Recipient List | | | |
| Medford Administrators | | | |
| Name | IP Address | Name | IP Address |
| Doug | 172.25.234.45 | | |
| Darrel | 172.25.234.100 | | |
| Tom | 172.25.234.210 | | |
| Jim | 172.25.234.120 | | |
| David | 172.25.234.234 | | |

2. Enter the name of the recipient or group of recipients in the Recipient List field.
3. Enter the name of each recipient (up to 10 names) in the Name fields.
4. Enter a valid IP address for each named recipient in the IP Address fields.
5. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the SNMP Recipients box open, click **Issue Test SNMP Trap** to send a test SNMP trap, or click **Cancel** to return to the SNMP Traps tab.

To edit a recipient on the SNMP trap list:

1. Click the hyperlink for the recipient you want to edit in the Recipient List column of the SNMP Traps tab. The SNMP Recipients box appears.
2. Edit the information as necessary.
3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the SNMP Recipients box open, click **Issue Test SNMP Trap** to send a test SNMP trap, or click **Cancel** to return to the SNMP Traps tab.

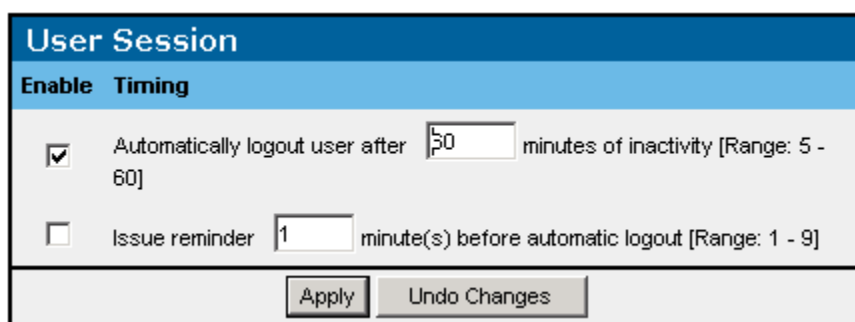
To delete a recipient from the SNMP trap list:

1. Select the checkbox in the Delete column of the SNMP Traps tab for the recipient or group of recipients you want to delete.
2. Click **Delete Selection(s)**.

Session Management Screen

The Session Management screen is only displayed for users who have administrator rights. The User Session box on the Session Management screen enables you to control user session parameters.

NOTE: The settings on the Session Management screen apply to all users.

The image shows a 'User Session' configuration window. It has a title bar 'User Session' and two tabs: 'Enable' and 'Timing'. The 'Enable' tab is selected. Inside the 'Enable' tab, there are two options. The first option is 'Automatically logout user after' followed by a text box containing '50' and the text 'minutes of inactivity [Range: 5 - 60]'. This option is checked with a checkbox. The second option is 'Issue reminder' followed by a text box containing '1' and the text 'minute(s) before automatic logout [Range: 1 - 9]'. This option is unchecked. At the bottom of the window, there are two buttons: 'Apply' and 'Undo Changes'.

To configure HP Rack and Power Manager to log out users after a period of inactivity:

1. Select the **Enable** checkbox to enable the option.
2. Enter the number of minutes that a user must be inactive before being logged out.
3. Click **Apply** to accept the information that has been entered, or click **Undo Changes** to reject all changes and keep the box open.

To issue a reminder to an inactive user before HP Rack and Power Manager automatically logs out the user:

1. Select the **Enable** checkbox to enable the option.
2. Enter the number of minutes before automatic logout that a reminder should be sent.
3. Click **Apply** to accept the information that has been entered, or click **Undo Changes** to reject all changes and keep the box open.

System Logs Screen

The System Logs screen is only displayed for users who have administrator rights. The System Events table on the System Logs screen shows all the system events that HP Rack and Power Manager has recorded since the last time the list was cleared. The amount of available history information is determined by the settings on the Database screen.

NOTE: System logs do not contain data from individual devices. Device data can be found on the Logs and Reports screen for each device.

| System Events | |
|---|-----------------------------------|
| Description | Date&Time |
| User [admin] logged in from [172.25.234.210]. | Friday August 09 2002 at 12:01... |
| User [admin] logged in from [172.25.234.219]. | Thursday August 08 2002 at 2... |
| User [admin] logged in from [172.25.234.210]. | Thursday August 08 2002 at 0... |
| User [admin] logged in from [172.25.234.219]. | Thursday August 08 2002 at 0... |
| LLWicker at 172.25.234.219 Discovery Cancelled changed from false to true | Thursday August 08 2002 at 0... |
| LLWicker at 172.25.234.219 Removed Discovered Device 172.25.234.90 | Thursday August 08 2002 at 0... |
| LLWicker at 172.25.234.219 Removed from managing 90 CMC | Thursday August 08 2002 at 0... |
| User [admin] logged in from [172.25.234.219]. | Thursday August 08 2002 at 0... |
| LLWicker at 172.25.234.219 Added Broadcast Recipient List named test | Thursday August 08 2002 at 0... |
| User [admin] logged in from [172.25.234.219]. | Wednesday August 07 2002 at... |
| User [admin] logged in from [172.25.234.219]. | Wednesday August 07 2002 at... |
| LLWicker at 172.25.234.219 Managed Device 246 UPS | Wednesday August 07 2002 at... |
| LLWicker at 172.25.234.219 Managed Device 150 UPS | Wednesday August 07 2002 at... |
| LLWicker at 172.25.234.219 Managed Device 129 UPS | Wednesday August 07 2002 at... |
| <div>Print Reports</div> <div>Refresh List</div> | |

Events listed can be sorted by description or date and time by clicking the column heading. System events include information such as user login times and changes to user profiles.

- To print the log, click **Print Reports** at the bottom of the screen.
- To refresh the log, click **Refresh List** at the bottom of the screen.

Database Screen

The Database screen is only displayed for users who have administrator rights. The Database screen enables you to set the number of records and days to which system and device logs are limited and change the password for the system database.

To configure the log settings:

| Log Settings | | | | | |
|-------------------|--------------|----------------------------------|------------------------------------|----------------------------------|---------------------------------|
| Parameter | Log Interval | Record Count | | Log History | |
| | | Unlimited | Limit To | Unlimited | Limit To |
| Device Data Logs | 20 min | <input checked="" type="radio"/> | <input type="radio"/> 1000 Records | <input checked="" type="radio"/> | <input type="radio"/> 30 day(s) |
| System Event Logs | n/a | <input checked="" type="radio"/> | <input type="radio"/> 1000 Records | <input checked="" type="radio"/> | <input type="radio"/> 30 day(s) |
| | | Apply | | Undo Changes | |

1. Select the log interval from the Log Interval dropdown box for Device Data logs. The log interval is the amount of time that elapses before the latest device logs are transferred to the database. For example, if the log interval is set to 20 minutes, device logs are transferred to the database every 20 minutes.
2. Configure the number of records that will be stored in the database for device data logs and system event logs. Select the **Unlimited** radio button in the Record Count column to keep records in the database as long as there is available space on the Management Server hard drive. Select the **Limit To** radio button, and enter a value to limit the number of records kept in the database. The maximum limit is determined by available disk space.

NOTE: When the Management Server begins to run out of disk space or the configured limit of records is reached, the Management Server overwrites the oldest records in the database.

3. Configure the length of time records that will be stored in the database for device data logs and system event logs. Select the **Unlimited** radio button in the Log History column to keep records in the database as long as there is available space on the Management Server hard drive. Select the **Limit To** radio button, and enter the number of days that records are kept in the database before being overwritten.

NOTE: When the Management Server begins to run out of disk space or the configured limit of records is reached, the Management Server overwrites the oldest records in the database.

NOTE: If the record count is set too low, the database will not accumulate 30 days of data.

4. Click **Apply** to accept the information that has been entered, or click **Undo Changes** to reject all changes and keep the screen open.

To change the database password:

1. Click **Change Password**.

The screenshot shows a window titled "RPM Database Account - SYSDBA". Inside the window, there is a button labeled "Change Password".

The Change Password box appears.

The screenshot shows a "Change Password" dialog box. It contains three text input fields: "Old Password", "New Password", and "Confirm Password". Below the fields are two buttons: "Apply" and "Cancel".

2. Enter the current password in the Old Password field. The default password is admin.
3. Enter the new password in the New Password field. A password can be between 1 and 50 characters in length. The characters can be alphabetic, numeric, or both. Passwords are case-sensitive.
4. Reenter the new password in the Confirm Password field.
5. Click **Apply** to accept the information or click **Cancel** to reject all changes.

Email Server Setup Screen

The Edit Server Setup screen is only displayed for users who have administrator rights. The Edit Server Properties box on the Email Server Setup screen enables you to set HP Rack and Power Manager to send alert messages through e-mail.

The screenshot shows an "Edit Server Properties" dialog box. It has a table with two columns: "Parameter" and "Setting".

| Parameter | Setting |
|--------------------------------------|------------------------|
| IP Address for SMTP Email Server | 172.25.234.101 |
| Email From Address: | LWicker@hp.com |
| Send Email(s) Marked as Being From : | Rack and Power Manager |

Below the table are two buttons: "Apply" and "Undo Changes".

To configure HP Rack and Power Manager to use the mail server:

1. Enter the IP address of the outgoing SMTP e-mail server.
2. Enter the e-mail address from which e-mail alert messages are sent.

3. Enter the name that HP Rack and Power Manager will mark messages as being sent from.
4. Click **Apply** to accept the information that has been entered, or click **Undo Changes** to reject all changes and keep the box open.

NOTE: Only servers using SMTP are supported.

Configuration Screen

The Configuration screen is only displayed for users who have administrator rights. The Server Properties box on the Configuration screen enables you to update the Management Server configuration.

| Server Properties | |
|--|---|
| Static IP Network | DHCP Networks |
| <input checked="" type="radio"/> Standard IP Routing Only | <input type="radio"/> Enable DNS Resolution |
| Page Refresh Rate | |
| <input type="text" value="5"/> (5 to 60 seconds) | |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> | |

To update the configuration:

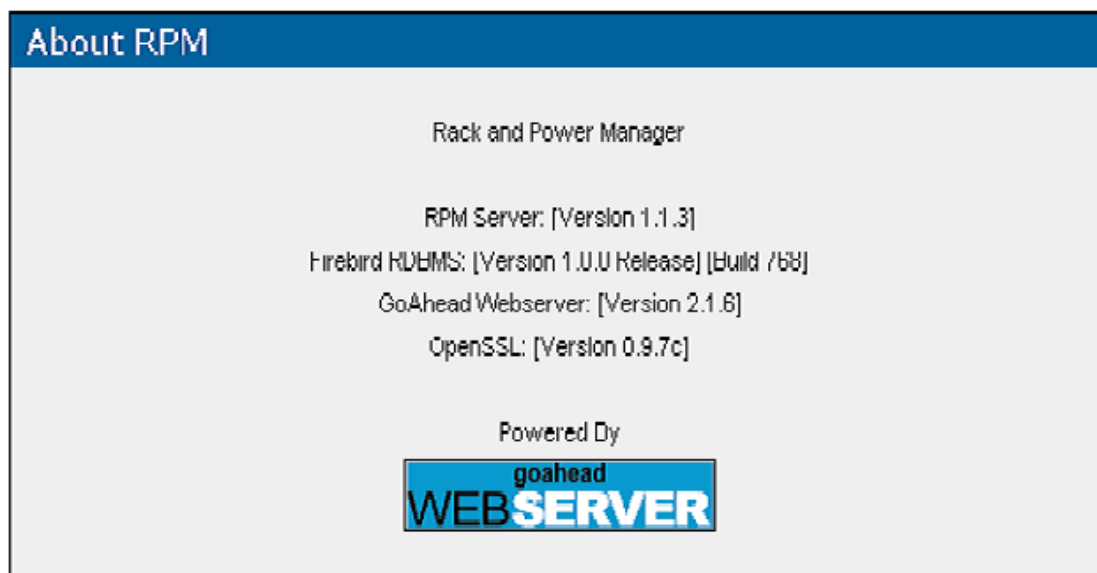
1. Select one of the following:
 - **Standard IP Routing Only**—Enables you to enter a host name or IP address in any field that requires a device address. The IP address or host name is stored, depending on what you entered. If you have a mixed network configuration (for example, static IP addresses for servers and dynamic IP addresses for workstations), select this option and enter the host name when appropriate.
 - **Enable DNS Resolution**—Enables you to enter a host name in any field that requires a device IP address. If an IP address is entered, a reverse DNS lookup is performed and only the host name is stored.
2. Enter the number of seconds that should elapse before HP Rack and Power Manager pages are refreshed.
3. Click **Apply** to accept the information that has been entered, or click **Undo Changes** to reject all changes and keep the box open.

NOTE: The Management Server should be configured to support DNS resolution.

About RPM Screen

The About RPM screen is only displayed for users who have administrator rights. The About RPM screen enables you to view revision and build information about the version of HP Rack and Power Manager you are currently running.

NOTE: The versions shown are for example only.








After the HP Rack and Power Manager settings are properly configured and devices and agents are discovered and managed, each device can be set up and monitored using the Devices tab, the Agents tab, the Queries tab, and the Home tab.

Devices Tab

Click the **Devices** tab in the top frame to view a list of hyperlinks for device configuration. Device configuration hyperlinks are available for UPSs and CMCs and include:

- Devices Home
- CMC Devices
 - Overview
 - Logs and Reports
 - Sensor Setup
 - Accessory Setup
 - Event Response
 - Properties
 - Manual Control
- UPS Devices
 - Overview
 - Logs and Reports
 - Attached Agents
 - Power Fail Settings
 - Scheduled Shutdowns
 - Event Response
 - Properties
 - Diagnostics
 - Manual Control




Devices Home Screen

| Active Alarms | | |
|---|--------------|--------------------------------|
| Severity | Device | Description |
|  | R1500XR SNMP | Connection lost to device |
|  | T2200XR SRA | Utility Not Present |
|  | T2200XR SRA | Input voltage is out of range. |
|  | T2200XR SRA | Utility Fail |
|  | T2200XR SRA | The UPS is on battery. |

Access the Devices Home screen by clicking the **UPS Devices** or **CMC Devices** hyperlink in the left navigation frame. The Devices Home screen summarizes the current active alarms for all devices that are monitored from your location. The information in the Active Alarms table automatically refreshes every five seconds.

The icon in the Status column allows you to determine the status of a device at a glance.

Table 5-1: Status Icons

| Icon | Device Status |
|---|---------------------------------|
|  | A minor problem is detected. |
|  | A major problem is detected. |
|  | A critical problem is detected. |

CMC Devices

Expand the menu for each CMC by clicking on the arrow to the right of the CMC device name in the left navigation frame. The hyperlinks in the expanded menu for CMC devices let you configure and monitor each managed CMC. To maximize the features of HP Rack and Power Manager, be sure to set up the sensors, accessories, and event responses for each CMC. The CMC name, location, and IP address are listed in the top right corner of each screen.

NOTE: Click the name of a CMC in the left navigation frame to view the Devices Home screen for all devices.

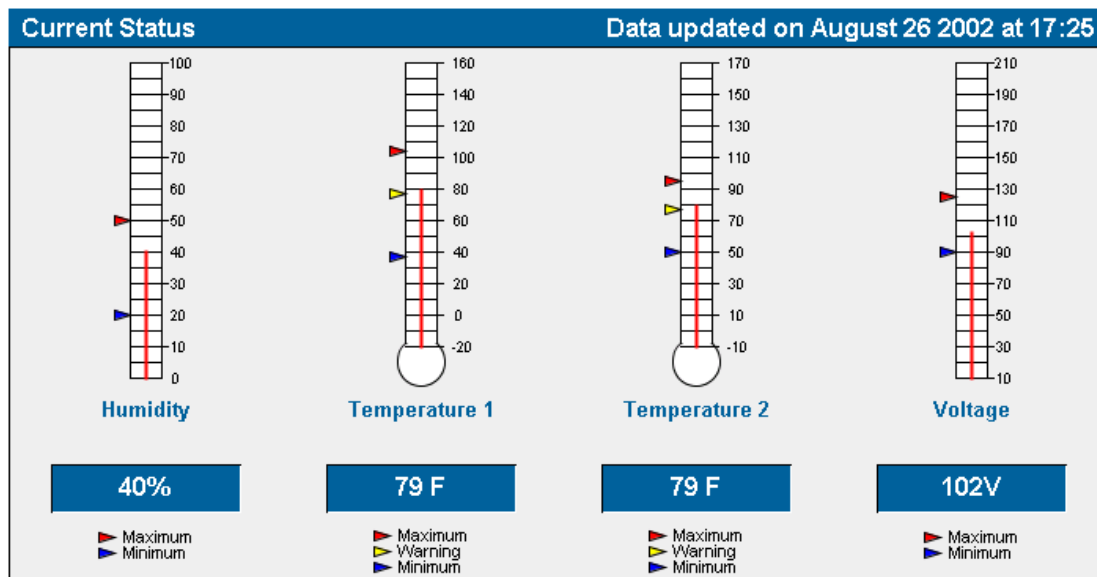
Device Overview Screen

The Device Overview screen displays the following information for each CMC:

- Device name
- Device location
- IP address
- Current status
- Active alarms
- Component status

The information automatically refreshes every five seconds.

The status is presented in graphical format in the Current Status box. Status information includes humidity, temperature 1, temperature 2, and voltage. A disabled item indicates that the corresponding sensor is not connected or is not enabled on the Sensor Setup screen. If the external temperature sensors are not connected, the internal temperature of the CMC is displayed.



NOTE: The arrows reflect the settings made on the Sensor Setup screen. For more information, refer to "Sensor Setup Screen" in this chapter.

The icons in the Active Alarms table allow you to determine the rack status detected by each CMC at a glance.







| Active Alarms | |
|---|-----------------------------|
| Severity | Description |
|  | Input 2 Opened |
|  | Temperature 1 Above Maximum |

Table 5-2: Status Icons

| Icon | Device Status |
|---|---|
|  | Normal operation |
|  | Minor problem (for example, an open door) |
|  | Major problem (for example, high temperature) |
|  | Critical problem (for example, faulty connection) |

The rack status is presented in text format in the Component Status table.

| Component Status | |
|-------------------|--|
| Component | Current Status |
| Fan 1 | fan is switched on by temperature sensor 1 |
| Front Door Rack 1 | closed |
| Front Door Rack 2 | closed |
| Humidity | humidity normal |
| Lock 1 | OK |
| Lock 2 | OK |
| Rear Door Rack 1 | closed |
| Rear Door Rack 2 | closed |
| Relay 1 | OK |
| Relay 2 | OK |
| Temp 1 | temperature normal |
| Temp 2 | temperature normal |
| Voltage | voltage normal |

Logs and Reports Screen

The Logs and Reports screen shows all alarm conditions recorded by the CMC since the last time the list was cleared. The amount of available history information is determined by the settings on the Database screen.

| Severity | Description | Date&Time |
|----------|---------------------------|-----------------------------------|
| ⓘ | Device connected | Friday September 19 2003 at 03... |
| ✓ | Shock Cleared | Thursday September 18 2003 at... |
| ✗ | Shock Detected | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |
| ✗ | Connection lost to device | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |
| ⓘ | Device connected | Thursday September 18 2003 at... |

☒ All Logs
 ☐ Environmental Logs
 ☐ Event Logs
 ☐ Change Logs

Refresh List
 Graphical Logs Screen...
 Print Reports
 Clear Logs

Logs can be viewed by:

- **All Logs**—Displays a complete list of all changes, alarms, and events
- **Environmental Logs**—Displays a list of conditions that occurred within the rack environment, such as high temperature or intrusion detected
- **Event Logs**—Displays a list of actions that the CMC takes in response to a condition, such as locking doors or turning off fans
- **Change Logs**—Displays a list of settings that have been changed for the CMC, such as temperature ranges that have been modified

NOTE: You can sort the logs for all views by clicking a column heading in the log table.

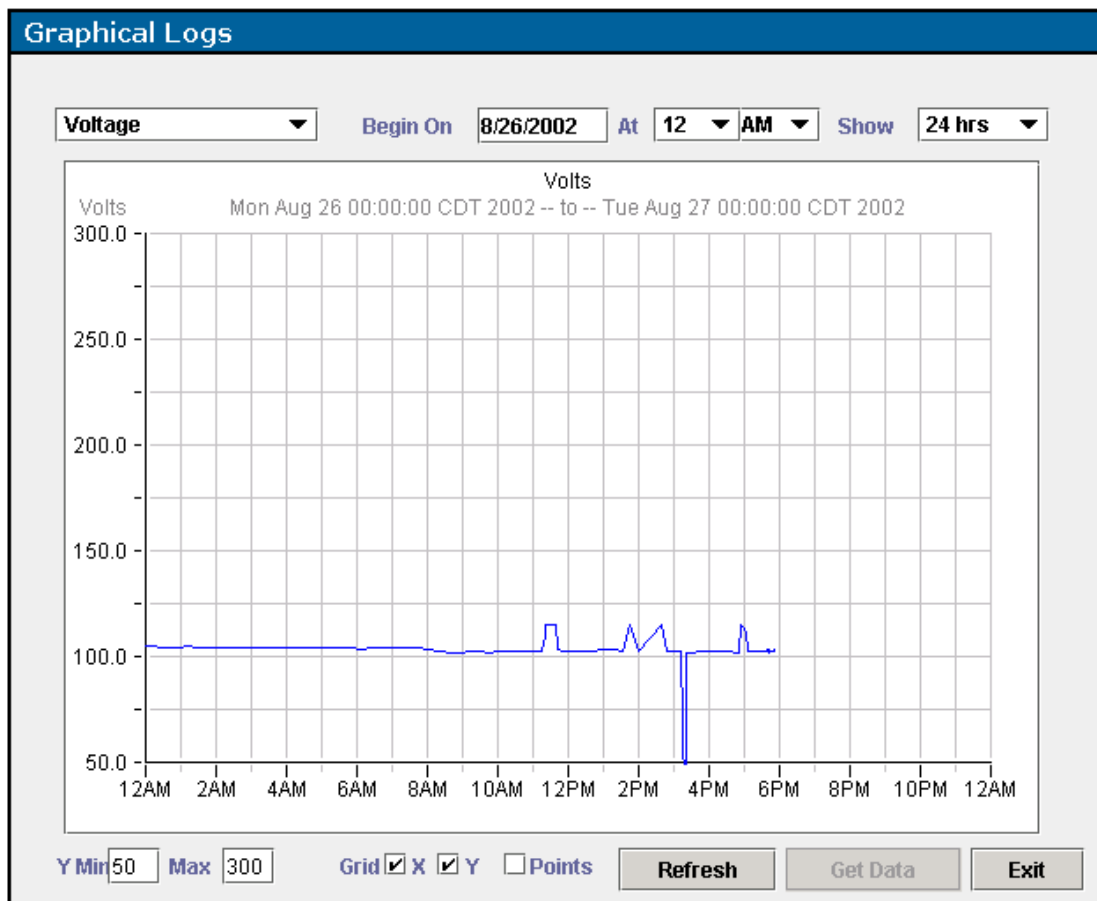
On the Logs and Reports screen:

- To refresh the log, click **Refresh List** at the bottom of the screen.
- To print the log, click **Print Reports** at the bottom of the screen.
- To delete all log entries, click **Clear Logs** at the bottom of the screen.

NOTE: You cannot select and delete individual entries in this list, but logs can be further sorted by severity, date and time, and description.

- To view graphical logs:
 - a. Click **Graphical Logs Screen** at the bottom of the screen. The Graphical Logs box appears. The Graphical Logs box enables you to configure the graphical log settings.

NOTE: The amount of available history information is determined by the settings on the Database screen. For more information, refer to “Database Screen” in Chapter 4.



- b. Select the type of graphical logs you want to view from the dropdown box in the top left corner.
- c. Select the date and time from which you want to start graphing.
- d. Select the length of time you want to graph.
- e. Click **Get Data** to display the graph.
- f. Click **Refresh** to update the graph that is currently on screen.

After the graphical log appears:

- a. Edit the minimum and maximum values for the Y axis of the graph.
- b. Select whether to show grid lines for each axis.
- c. Select whether to include data points on the graph.

- d. Click **Get Data** to update the graph.
- e. Click **Refresh** to update the graph that is currently on-screen.
- f. Click **Exit** to close the **Graphical Logs** box and return to the Logs and Reports screen.

Sensor Setup Screen

The Sensor Setup screen enables you to configure the sensors connected to the CMC.

| Sensor Setup | | | | | | | | | |
|------------------|-------------------------------------|-------------------------------------|--|-----|---|-----|---------|-----|--|
| Icon | Parameter | Available | Event Thresholds | | | | | | |
| | | | Minimum | | Warning | | Maximum | | |
| | Temperature 1 | <input checked="" type="checkbox"/> | 37 | ° F | 82 | ° F | 104 | ° F | |
| | Temperature 2 | <input checked="" type="checkbox"/> | 50 | ° F | 82 | ° F | 95 | ° F | |
| | Humidity | <input checked="" type="checkbox"/> | 20 | % | --- | - | 60 | % | |
| | Voltage | <input checked="" type="checkbox"/> | 90 | V | --- | - | 125 | V | |
| | Shock | <input checked="" type="checkbox"/> | 5 (Shock Sensitivity) | | | | | | |
| | Smoke | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> Switch Fans Off <input checked="" type="checkbox"/> Unlock Doors | | | | | | |
| Parameter | Available | Labels | Switch Fans Off | | Shock Sensor | | | | |
| 1 Intrusion 1 | <input checked="" type="checkbox"/> | Front Door Rack 1 | Both | | <input checked="" type="checkbox"/> Disable | | | | |
| 2 Intrusion 2 | <input checked="" type="checkbox"/> | Rear Door Rack 1 | Both | | <input checked="" type="checkbox"/> Disable | | | | |
| 3 Intrusion 3 | <input checked="" type="checkbox"/> | Front Door Rack 2 | Both | | <input checked="" type="checkbox"/> Disable | | | | |
| 4 Intrusion 4 | <input checked="" type="checkbox"/> | Rear Door Rack 2 | Both | | <input checked="" type="checkbox"/> Disable | | | | |
| AUX1 Auxiliary 1 | <input type="checkbox"/> | | Normally Open | | | | | | |
| AUX2 Auxiliary 2 | <input type="checkbox"/> | | Normally Open | | | | | | |

For each sensor listed, select **Available** to enable a sensor that is connected to the CMC. If a sensor is not connected and is shown as available, the CMC will erroneously detect an alarm condition and send alerts.

NOTE: For the initial system installation and boot, the CMC automatically recognizes installed sensors and fans.

NOTE: If an installed sensor is to be no longer used, disconnect the sensor from the rear of the CMC, and deselect the **Available** checkbox on the Sensor Setup screen.

The sensor entries have additional checkboxes and fields that are used to define setpoints to which alerts can be associated:

- **Temperature 1 and 2**—Configure the temperature setpoints.
 - Set the minimum acceptable temperature. The minimum temperature must be within the 0° to 37° C (32° to 100° F) range.
 - Set the warning temperature. The warning temperature must be within the 0° to 93° C (32° to 200° F) range.
 - Set the maximum acceptable temperature. The maximum temperature must be within the 0° to 93° C (32° to 200° F) range.

NOTE: The Sensor Setup screen displays temperature unit in either °C or °F. Select the unit of temperature on the CMC Properties screen.

- **Humidity**—Set the minimum and maximum acceptable values. The minimum and maximum humidity must be within the 0% to 100% range.
- **Voltage**—Set the minimum and maximum acceptable values. The minimum and maximum voltage must be within the 0 to 255 V range.
- **Shock**—Set the sensitivity of the detector. Enter 10 in this field for maximum sensitivity; 5 is the default value.
- **Smoke**—Select a checkbox to determine whether the fans are to be turned off and the rack doors unlocked if the sensor detects smoke.



CAUTION: To minimize potential damage from smoke and fire, HP recommends that both fans be set to turn off when smoke is detected.

- **Intrusion x**—Use these fields and checkboxes to configure door intrusion.

IMPORTANT: For the door-locking feature to work properly, you must assign at least one intrusion sensor to each lockset.

- Type a description of the door in the Labels field.
 - Select an option from the dropdown box to determine which fans, if any, are to be switched off when the door is opened.
 - Click **Disable** to disregard the shock sensor alert when the door is opened.
- **Auxiliary x**—Use these fields and checkboxes for any supported detectors connected to the appropriate input ports on the rear of the CMC. Enter the description of the sensor type into the text field. For more information about auxiliary sensors, refer to the CMC documentation.

After entering information on this screen, do one of the following:

- Click **Apply** at the bottom of the screen to accept the information that has been entered.
- Click **Undo Changes** to reject all changes and keep the screen open.

After the CMC sensors are set up, the CMC automatically activates the following alert actions:

- Temperature 1 or Temperature 2 is detected below minimum, at warning, or above maximum—An internal CMC alarm sounds and both alarm relays are triggered.

NOTE: For more information about alarm relays, refer to “Accessory Setup Screen” in this chapter.

- Humidity is detected below minimum or above maximum—An internal CMC alarm sounds and both alarm relays are triggered.
- Voltage is detected below minimum or above maximum—An internal CMC alarm sounds and both alarm relays are triggered.
- Smoke is detected—Fans are turned off and rack doors are unlocked if these options are selected on the Sensor Setup screen.
- Intrusion is detected—Fans are turned off and the shock sensor is disabled if these options are selected on the Sensor Setup screen.

Additional alert actions are configured on the Event Response Overview screen.



Accessory Setup Screen

The Accessory Setup screen enables you to enter information about the accessories connected to the CMC. After entering information on this screen, do one of the following:

- Click **Apply** at the bottom of the screen to accept the information that has been entered.
- Click **Undo Changes** to reject all changes and keep the screen open.

Fans Tab



Select the **Fans** tab to configure the fan settings.

| Fans | | Alarm Relays | Lockset 1 | Lockset 2 |
|---|-------------------------------------|--------------|------------|-----------|
| Description | Available | Start At | Hysteresis | |
|  Fan 1 | <input checked="" type="checkbox"/> | 95 ° F | 9 ° F | |
|  Fan 2 | <input checked="" type="checkbox"/> | 113 ° F | 9 ° F | |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> | | | | |

1. Select **Available** for each fan that is connected to the CMC. If a fan that is not connected is shown as available, the CMC will erroneously detect an alarm condition and send alerts.
2. Enter the temperature at which fans turn on in the Start At field.
3. Set the operating range for the fan in the Hysteresis field. For example, if the Hysteresis value is set to 8° F and the Start At value to 75° F, the fan switches on when the temperature reaches 75° F and switches off when the temperature has decreased by 8° F (to 67° F).

Alarm Relays Tab

Select the **Alarm Relays** tab to configure the alarm relays. Alarm relays provide additional means for notification of an alarm condition. The setting of the logic radio buttons determines the alert behavior when an alarm condition occurs.

| Fans | | Alarm Relays | | Lockset 1 | | Lockset 2 | |
|-----------------|--------------------------|--|--|--|--|-----------|--|
| Description | Available | Alarm Logic | | Local Silence Button | | | |
| 1 Alarm Relay 1 | <input type="checkbox"/> | Open at Alarm ▾ | |  <input type="checkbox"/> Enabled | | | |
| 2 Alarm Relay 2 | <input type="checkbox"/> | Open at Alarm ▾ | |  <input type="checkbox"/> Enabled | | | |
| | | <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> | | | | | |

1. Select **Available** for each alarm relay that is connected to the CMC. If an alarm relay that is not connected is shown as available, the CMC will erroneously detect an alarm condition and send alerts. For more information about alarm relays, refer to the CMC documentation.
2. Select the appropriate logic in the Alarm Logic field:
 - If an alarm occurs when Close at Alarm is selected, an electrical circuit closes. For example, a light switches on, a door opens, or a siren sounds.
 - If an alarm occurs when Open at Alarm is selected, a signal turns off. For example, a green light that indicates normal operation switches off to denote abnormal status for the detector providing the input.
3. Select **Enabled** in the Local Silence Button field to allow the external alarm to be silenced by pressing the Enter/Alarm Silence button on the CMC front panel. An external alarm (a horn or siren, for example) connected to the alarm relay can be silenced for just the current alarm. This acknowledges the alarm condition while the cause is corrected and still allows subsequent alarm conditions to register at the CMC and set off a new audible alarm.

Locksets Tabs

Select the **Lockset 1** tab to configure the first lockset. Select the **Lockset 2** tab to configure the second lockset. To set each lockset to lock and unlock rack doors:

| Fans | | Alarm Relays | | Lockset 1 | | Lockset 2 | |
|--|--|----------------------------------|----------------------------------|-------------------------------------|--------------------------------------|--|----|
| <div>🔒1</div> <div>Lock Set Status <input type="checkbox"/> Available</div> | | | | | | | |
| Locks / Unlocks | | Yes | No | Locks / Unlocks | | Yes | No |
| 🔒1 | | <input checked="" type="radio"/> | <input type="radio"/> | 🔒3 | | unavailable | |
| 🔒2 | | <input type="radio"/> | <input checked="" type="radio"/> | 🔒4 | | unavailable | |
| Lockset Event | | | | Unlock Upon Event? | | | |
| Power Failure | | | | <input type="radio"/> No | <input type="radio"/> Yes | <input checked="" type="radio"/> Enable Concealed Door Release | |
| Low Battery | | | | <input type="radio"/> No | <input checked="" type="radio"/> Yes | <input type="radio"/> Enable Concealed Door Release | |
| Network Failure | | | | <input checked="" type="radio"/> No | <input type="radio"/> Yes | <input type="radio"/> Enable Concealed Door Release | |
| Communications Failure | | | | <input type="radio"/> No | <input type="radio"/> Yes | <input type="radio"/> Enable Concealed Door Release | |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> | | | | | | | |

1. Select **Available** in the Lock Set Status field for each lockset that is connected to the CMC. If a lockset that is not connected is shown as available, the CMC will erroneously detect an alarm condition and send alerts.
2. Click **Yes** for each rack door that the lock set operates. Each lockset operates two rack doors.

IMPORTANT: For the door-locking feature to work properly, you must assign at least one intrusion sensor to each lockset. Refer to “Sensor Setup Screen” in this chapter for information on setting up the intrusion sensors.

3. Click **Yes** in the Unlock Upon Event? column to automatically unlock the doors during a power failure, low battery warning, network failure, or communications failure. Click **Enable Concealed Door Release** to be able to manually open locked doors using a hidden switch. For more information about the concealed door release, refer to the CMC documentation.

NOTE: HP Rack and Power Manager cannot detect the concealed door release. Be sure that the concealed door release option is not selected for CMCs that control racks without a concealed door release.

Event Response Overview Screen

The Event Response Overview screen contains a Supported Events table that summarizes the manner in which alerts are issued for each alarm condition on the CMC.

| Supported Events | | | | | |
|---|---------------------|-----------|------|--|----------------|
| | | | | Copy Event Configuration from : 91 <input type="button" value="Copy"/> | |
| Description | Alert Notifications | | | Computer Command | Device Actions |
| | Email | Broadcast | SNMP | | |
| Aux 1 Alarm | ✓ | ✓ | ✓ | ✓ | ✓ |
| Aux 1 Cleared | ✓ | ✓ | ✓ | ✓ | ✓ |
| Aux 2 Alarm | ✓ | ✓ | ✓ | ✓ | ✓ |
| Aux 2 Cleared | ✓ | ✓ | ✓ | ✓ | ✓ |
| Connection lost to device | ✓ | ✓ | ✓ | ✓ | - |
| Device connected | ✓ | ✓ | ✓ | ✓ | ✓ |
| Device settings changed | ✓ | ✓ | ✓ | ✓ | ✓ |
| Failed to connect to device | - | - | - | - | - |
| Humidity Above Maximum | ✓ | ✓ | ✓ | ✓ | ✓ |
| Humidity Below Minimum | ✓ | ✓ | ✓ | ✓ | ✓ |
| Humidity Normal | ✓ | ✓ | ✓ | ✓ | ✓ |
| Input 1 Closed | ✓ | ✓ | ✓ | ✓ | ✓ |
| Input 1 Opened | ✓ | ✓ | - | ✓ | ✓ |
| Input 2 Closed | - | - | - | - | - |
| Input 2 Opened | - | - | - | - | - |
| Input 3 Closed | - | - | - | - | - |
| Input 3 Opened | - | - | - | - | - |
| Input 4 Closed | - | - | - | - | - |
| Input 4 Opened | - | - | - | - | - |
| Lockset 1 Error | - | - | - | - | - |
| Lockset 1 Failed To Lock | - | - | - | - | - |

When a new CMC is installed or a new sensor is connected to an existing CMC, enter the event response information for the related alarm conditions.

- To copy the event response configuration of another CMC, select the CMC you want to copy in the Copy Event Configuration from: field, and click **Copy**.
- To edit the response of individual events, click the hyperlink for the event response you want to configure in the Description column. The Event Response screen appears.

The Event Response screen enables you to configure event responses for supported events. For each event, HP Rack and Power Manager can be configured to send alert notifications (e-mail and broadcast messages and SNMP traps), run a computer command, and initiate a device action (release a lockset or turn off a fan).

To configure each supported event response:

1. Select the event you want to configure from the Select Event dropdown box.

| Select Event |
|-------------------------------|
| Temperature 1 Above Warning ▼ |

2. Select the **Alert Notifications** tab, the **Commands** tab, or the **Device Actions** tab.

Alert Notifications Tab

Select the **Alert Notifications** tab to configure the alert notifications.

NOTE: Before an alert notification can be set up, you must first configure the notification recipients. For information about configuring notification recipients, refer to “Notification Recipients Screen” in Chapter 4.

| Alert Notifications | Commands | Device Actions |
|----------------------------|------------------------|----------------|
| Notification Type | Recipient List | Delay |
| Email/Paging | Houston Administrators | 1 |
| Delete | | |
| Add New Alert Notification | | |
| Delete Selection(s) | | |
| Return to Event Summary | | |

To add an alert notification:

1. Click **Add New Alert Notification**. The Add/Edit Notification box appears.

| Add / Edit Notification | | |
|-------------------------|--------------------------|---------|
| Notification Type | Recipient List | Delay |
| Email/Paging ▼ | Houston Administrators ▼ | 1 |
| | | Sec Min |
| Apply | | |
| Undo Changes | | |
| Cancel | | |

2. Select the type of notification from the Notification Type dropdown box. Available options are email/paging, broadcast, and SNMP traps.
3. Select the group of recipients that should receive the alert notification from the Recipient List dropdown box. Recipient lists are configured on the Notification Recipients screen.
4. Enter the notification delay in the Delay column and select a radio button for either seconds or minutes. The delay is the amount of time that elapses between the occurrence of the event and the sending of the notification.
5. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Notification box open, or click **Cancel** to return to the Alert Notifications tab.

To edit an alert notification:

1. Select the event you want to edit from the Select Event dropdown box.
2. Click the hyperlink for the notification you want to edit in the Notification Type column of the Alert Notifications tab. The Add/Edit Notification box appears.
3. Edit the notification type, the recipient list, and the notification delay.
4. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Notification box open, or click **Cancel** to return to the Alert Notifications tab.

To delete an alert notification:

1. Select the checkbox in the Delete column of the Alert Notifications tab for the notification you want to delete.
2. Click **Delete Selection(s)**.

To return to the Event Response Overview screen, click **Return to Event Summary**.

Commands Tab

Select the **Commands** tab to configure the computer commands.

| Alert Notifications | Command | Device Actions | | |
|-------------------------------|---------------------|-------------------------|--------------------------|--|
| Command | Execute On | Delay | Delete | |
| CopyFiles.bat | Server | 0 sec | <input type="checkbox"/> | |
| Add New Command | Delete Selection(s) | Return to Event Summary | | |

To add a command:

1. Click **Add New Command**. The Add/Edit Command box appears.

| Add / Edit Command | | |
|--|---------------------|--|
| Command | Execute On | Delay |
| CopyFiles.bat | SQL Database Server | 0 <input checked="" type="radio"/> Sec <input type="radio"/> Min |
| <div> Apply Undo Changes Cancel </div> | | |

2. Enter the command (for example, C:\start.bat or /opt/snapshot.sh), select the server that the command will run on, and set the notification delay.

NOTE: HP Rack and Power Manager cannot run a command on a server unless the server has a System Agent installed. The batch file or script that will be run must reside on the server on which the command will be executed.

3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Command box open, or click **Cancel** to return to the Commands tab.

IMPORTANT: Remote command execution can be a very powerful tool and should be tested thoroughly before being used for the first time in response to an event. Not all programs and applications are suitable to be executed as a process, especially programs that do not create their own environments. Command execution behavior varies by operating system, and, in general, commands to be executed should be put into a batch file or shell script depending on the operating system that will be executing the commands. Using a batch file or shell script gives you more control over the circumstances in which commands are executed and allows the commands to run in a copy of the environment.

When selecting commands to be executed in the batch file or script file, choose programs and processes that do not require user input or interaction. Since the commands can be executed at any time, it is difficult to predict if a user will be available to interact with any programs that are launched. Verify that specified drive mappings, user specific directories, and programs that require special rights are accessible by the batch file or script file.

Most operating systems have a method for spawning new processes. In Windows operating systems, commands can be preceded with `START`, and in most Linux/Unix systems, `sh` can be used. When designing your batch file or script file, determine which commands require a separate process and which commands can be run one after another in the same process. Refer to the documentation that came with your operating system for more information on batch files or script files.

To edit a command:

1. Select the event you want to edit from the Select Event dropdown box.
2. Click the hyperlink for the command you want to edit in the Command column of the Commands tab. The Add/Edit Command box appears.
3. Edit the command, the server that the command will run on, and the command delay.
4. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Command box open, or click **Cancel** to return to the Commands tab.

To delete a command:

1. Select the checkbox in the Delete column of the Commands tab for the command you want to delete.
2. Click **Delete Selection(s)**.

To return to the Event Response Overview screen, click **Return to Event Summary**.

Device Actions Tab

Device actions can be taken on the device you are configuring and on other managed devices. For example, if a CMC detects an over-temperature condition, a device action can be configured to shut down the UPS load segments to which servers affected by the condition are connected.

Select the **Device Actions** tab to configure the device actions.



CAUTION: For each device action that you set, you may need to configure the normal, opposite response. For example, if you configure the CMC to turn on a fan when the temperature exceeds normal, you may also want to configure the CMC to turn off the fan when the temperature returns to normal.

| Alert Notifications | | Commands | | Device Actions | |
|-------------------------|--|-----------------------------|--|-------------------------|--------------------------|
| Target Device | | Action to Perform | | Delay | Delete |
| CMC 205 | | Set Alarm Relay 1 to Active | | 0 | <input type="checkbox"/> |
| UPS 227 | | Restart Entire UPS | | 0 | <input type="checkbox"/> |
| Add New Device Action | | Delete Selection(s) | | Return to Event Summary | |

To add a device action:

1. Click **Add New Device Action**. The Add/Edit Device Action box appears.

| Add / Edit Device Action | | |
|--|-----------------------------|--|
| Target Device | Action to Perform | Delay |
| CMC-Rack 35 | Set Alarm Relay 1 to Active | 0 <input checked="" type="radio"/> Sec <input type="radio"/> Min |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> <input type="button" value="Cancel"/> | | |

2. Enter the target device, the action to perform, and the notification delay.
3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Device Action box open, or click **Cancel** to return to the Device Actions tab.

To edit a device action:

1. Select the event you want to edit from the Select Event dropdown box.
2. Click the hyperlink for the device action you want to edit in the Target Device column of the Device Actions tab. The Add/Edit Device Action box appears.
3. Edit the target device, the action to perform, and the action delay.
4. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Device Action box open, or click **Cancel** to return to the Device Actions tab.

To delete a device action:

1. Select the checkbox in the Delete column of the Device Actions tab for the device action you want to delete.
2. Click **Delete Selection(s)**.


To return to the Event Response Overview screen, click **Return to Event Summary**.

Properties Screen

The Properties screen enables you to enter and view general information about the CMC.

Device Properties Box

Information entered in the Device Properties box is used by HP Rack and Power Manager to identify devices.

| Device Properties | |
|---|--|
| Parameters | Settings |
| Device Name | CMC Rack 34 |
| Device Location | Medford Office |
| Temperature Format | Fahrenheit |
| Audible Alarm | <input checked="" type="checkbox"/> |
|  Enable Local Alarm Silence Button | <input checked="" type="checkbox"/> |
| Language | English |
| SNMP: | |
| Contact Information | LWicker (800) 555-4444 |
| Read Community String | public |
| Write Community String | public |
| Device Password | ***** <input checked="" type="checkbox"/> Enable |
| <div>Apply Undo Changes</div> | |

After entering information in the Device Properties box, do one of the following:

- Click **Apply** at the bottom of the screen to accept the information that has been entered.
- Click **Undo Changes** to reject all changes and keep the box open.

Table 5-3: CMC Device Properties

| Table Item | Comments |
|-----------------------------------|---|
| Device Name | Enter the name of the CMC to aid in identification when sending alert messages and viewing from the console. |
| Device Location | Select the physical location of the CMC to aid in identification when alert messages are sent. |
| Temperature Format | Select the temperature unit of measure (0° to 93° C, 32° to 200° F). |
| Audible Alarm | Enable or disable audible alarms. |
| Enable Local Alarm Silence Button | Select the checkbox to allow an active audible alarm to be silenced when the Enter/Alarm Silence button on the CMC front panel is pressed. New alarm conditions will continue to signal audible alarms after Enter/Alarm Silence is pressed. |
| Language | Select the language to display on the CMC LCD menu. Available languages are English, French, Italian, German, Spanish, Dutch, and Japanese. |
| SNMP Contact Information | Enter the user name, e-mail address, or pager number of a person who can provide direct physical access to the room or building where the CMC is located in case of an emergency. This person need not have responsibility for actually maintaining the CMC. |
| SNMP Read Community String | <p>Edit the SNMP Read Community string if necessary. The SNMP Read Community string displayed on the CMC Properties screen must match that on the CMC device.</p> <p>IMPORTANT: If you edit the string on this screen, be sure to make the same change for the CMC device using a terminal emulation program.</p> |
| SNMP Write Community String | <p>Edit the SNMP Write Community string if necessary. The SNMP Write Community string displayed on the CMC Properties screen must match that on the CMC device.</p> <p>IMPORTANT: If you edit the string on this screen, be sure to make the same change for the CMC device using a terminal emulation program.</p> |
| Device Password | Enter a password for the CMC hardware, and select Enable to activate the password. Passwords can be no longer than six characters. Characters can only be capital letters or numbers. If the password is enabled, the password is required to change the CMC IP address and settings, using the front panel controls or a terminal program. This password is different than the login password for HP Rack and Power Manager, which is set on the My Account screen. |

Version Control Table

The Version Control table lists the hardware, software, firmware, and MIB versions the CMC is currently running. The status column indicates updated versions that are available.

| Version Control | | |
|-----------------|---------|------------------|
| Description | Version | Update Available |
| Hardware | 05 | N/A |
| Software | 1.12 | N/A |
| Firmware | 2.04 | N/A |
| MIB | 1.1 | N/A |
| | | Update |

Compare the Version column to the Update Available column. If an update is available, click **Update**.

Manual Control Screen

The Manual Control screen enables you to control fans and alarm relays and unlock doors while the rack is being accessed (for maintenance, for example).

Only locksets, fans, and alarm relays that are enabled on the Accessory Setup screen display options on the Manual Control screen.

Locksets Box

To manually control locksets, select the appropriate settings for each lockset, and click **Apply** to accept the information.

- Select **Lock** to lock the doors.
- Select **Timed Unlock for x minutes** to unlock the doors for x amount of time.
- Select **Unlock** to unlock the doors immediately.
- Select **Enable CDR** to activate the concealed door release. Because HP Rack and Power Manager cannot detect the concealed door release, be sure that this option is not selected for CMCs that control racks without a concealed door release.

NOTE: If the door is unlocked using the concealed door release, the door remains unlocked for the amount of time that is entered in the Timed Unlock entry box for that lockset.

| Locksets | | |
|-----------|---------------|--|
| Device | Current State | Set To |
| LockSet 1 | Lock | <input type="radio"/> Timed Unlock for 10 secs <input type="radio"/> Unlock <input type="radio"/> Enable CDR |
| LockSet 2 | Lock | <input type="radio"/> Timed Unlock for 10 secs <input type="radio"/> Unlock <input type="radio"/> Enable CDR |
| | | Apply |

Fans Box

To manually control fans, select the appropriate setting for each fan, and click **Apply** to accept the information. Options are On, Off, or Auto.

NOTE: When set to Auto, the fans behave according to the settings on the Accessory Setup screen.

| Fans | | |
|--------------------------------------|---------------|--|
| Device | Current State | Set To |
| Fan 1 | Auto | <input type="radio"/> On <input type="radio"/> Off |
| Fan 2 | Auto | <input type="radio"/> On <input type="radio"/> Off |
| <input type="button" value="Apply"/> | | |

Alarm Relays Box

To manually control alarm relays, select the appropriate setting for each alarm relay, and click **Apply** to accept the information. Options are Switched or Not Switched.

| Alarm Relays | | |
|--------------------------------------|---------------|--------------------------------|
| Device | Current State | Set To |
| Relay 1 | Inactive | <input type="radio"/> Activate |
| Relay 2 | Inactive | <input type="radio"/> Activate |
| <input type="button" value="Apply"/> | | |

UPS Devices

Expand the menu for each UPS by clicking the arrow to the right of the UPS device name in the left navigation frame. The hyperlinks in the expanded menu for UPS devices let you configure and monitor each managed UPS. To maximize the features of HP Rack and Power Manager, be sure to set up the attached agents, power failure settings, scheduled shutdowns, and event responses for each UPS. The UPS name, location, and IP address are listed in the top right corner of each screen.

NOTE: Click the name of a UPS in the left navigation frame to view the Active Alarms screen for all devices.

Device Overview Screen

The Device Overview screen displays the following information for each UPS:

- UPS name
- UPS location
- IP address
- Current status
- Date/Time stamp
- Active alarms

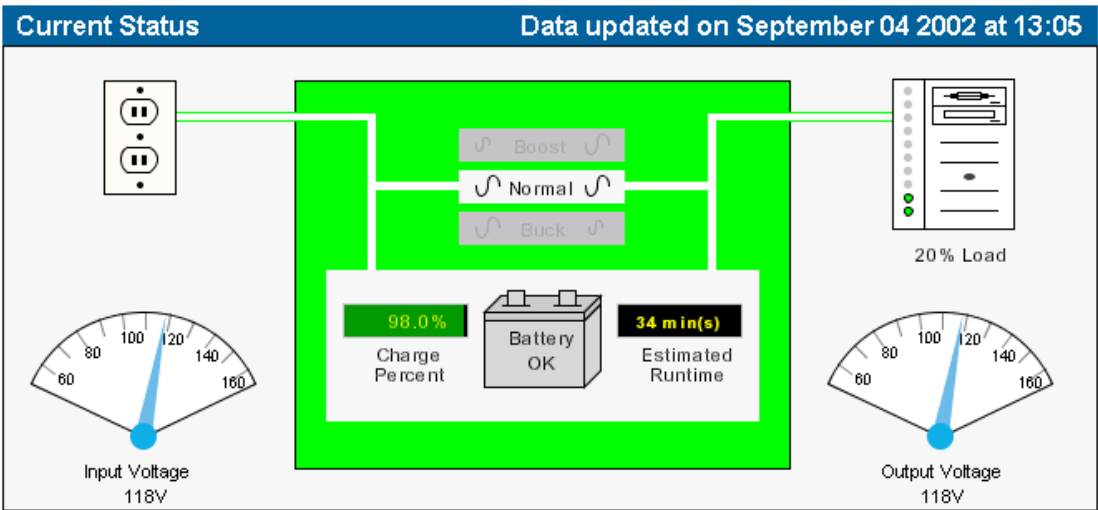
The information automatically refreshes every 15 seconds.

Current Status Box

The status is presented in graphical format in the Current Status box. Status information includes:

- Input voltage—The voltage level that is supplying power to the UPS.
- Charge percent—The amount of battery charge by percent.
- Battery status—The current state of the battery.
- Estimated runtime—The time in minutes that the UPS will remain on battery.
- Percent load—The percent of the UPS capacity that is being used.
- Output voltage—The voltage level that the UPS is supplying to the load segments.
- Buck—The UPS automatically decreases high input voltage to prevent the UPS from going on battery.
- Boost—The UPS automatically increases low input voltage to prevent the UPS from going on battery.

- On battery—The UPS is operating from battery power.
- Overload—The load is greater than the load for which the UPS is intended.



Active Alarms Table

The icons in the Active Alarms table allow you to determine the alarm status of the UPS at a glance.















| Active Alarms | |
|---------------|--------------------------------|
| Severity | Description |
| | Input voltage is out of range. |
| | The UPS is on battery. |
| | Utility Fail |
| | Utility Not Present |

Table 5-4: Status Icons

| Icon | Device Status |
|------|---|
| | Normal operation |
| | Minor problem (for example, a battery is low) |
| | Major problem (for example, a UPS is On Boost) |
| | Critical problem (for example, faulty connection) |

Logs and Reports Screen

The Logs and Reports screen shows all the events that have occurred with the UPS since the last time the list was cleared. The amount of available history information is determined by the settings on the Database screen.

| All Logs | | |
|---|--|---------------------------------------|
| Severity | Description | Date&Time |
|  | Device connected | Wednesday January 21 2004 at 15:45:41 |
|  | Connection lost to device | Wednesday January 21 2004 at 15:31:50 |
|  | Input Out of Range | Wednesday January 21 2004 at 15:27:15 |
|  | On Battery | Wednesday January 21 2004 at 15:27:15 |
|  | Device settings changed | Wednesday January 21 2004 at 15:24:59 |
|  | Shutdown Delay changed from 180 to 240 on Agent Falstaff | Wednesday January 21 2004 at 15:24:49 |
|  | Device connected | Wednesday January 21 2004 at 15:23:47 |
|  | Device connected | Wednesday January 21 2004 at 14:23:10 |
|  | Input Out of Range | Wednesday January 21 2004 at 14:12:47 |
|  | On Battery | Wednesday January 21 2004 at 14:12:47 |
|  | Device connected | Wednesday January 21 2004 at 10:00:46 |
|  | Input Out of Range | Wednesday January 21 2004 at 09:43:58 |
|  | On Battery | Wednesday January 21 2004 at 09:43:58 |
|  | Device connected | Tuesday January 20 2004 at 17:12:33 |

☒ All Logs
 ☐ Power Logs
 ☐ Event Logs
 ☐ Change Logs

Refresh List
 Graphical Logs Screen...
 Print Reports
 Clear Logs

Logs can be viewed by:

- **All Logs**—Displays a complete list of all changes and events
- **Power Logs**—Displays a list of power conditions, such as a loss of utility power
- **Event Logs**—Displays a list of actions that the UPS takes in response to a condition, such as shutting down a load segment
- **Change Logs**—Displays a list of settings that have been changed for the UPS, such as power failure settings that have been modified

NOTE: You can sort the logs for all views by clicking a column heading in the log table.

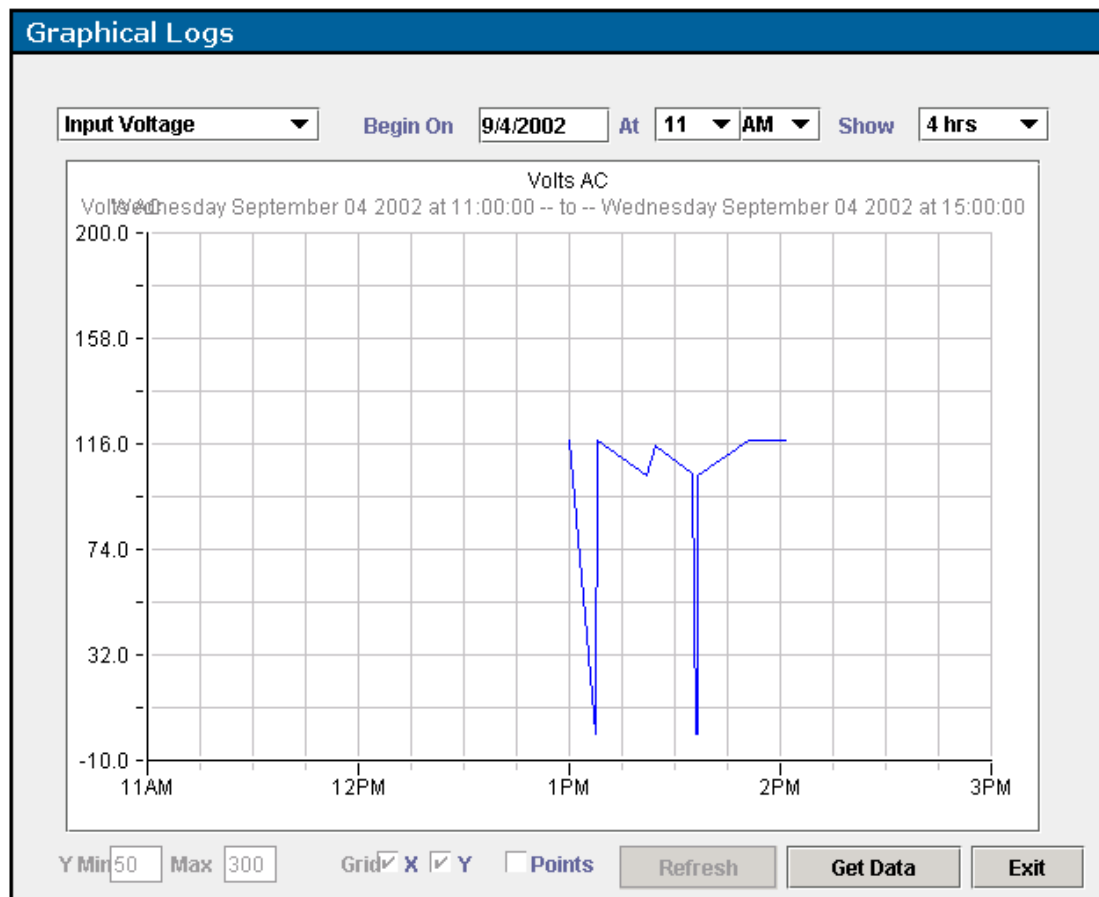
On the Logs and Reports screen:

- To refresh the log, click **Refresh List** at the bottom of the screen.
- To print the log, click **Print Reports** at the bottom of the screen.
- To delete all log entries, click **Clear Logs** at the bottom of the screen.

NOTE: You cannot select and delete individual entries in this list, but logs can be further sorted by severity, date and time, and description.

- To view graphical logs:
 - a. Click **Graphical Logs Screen** at the bottom of the screen. The Graphical Logs box enables you to configure the graphical log settings.

NOTE: The amount of available history information is determined by the settings on the Database screen. For more information, refer to “Database Screen” in Chapter 4.



- b. Select the type of graphical logs you want to view from the dropdown box in the top left corner.
- c. Select the date and time from which you want to start graphing.
- d. Select the length of time you want to graph.
- e. Click **Get Data** to display the graph.
- f. Click **Refresh** to update the graph that is currently on-screen.

After the graphical log appears:

- a. Edit the minimum and maximum values for the Y axis of the graph.
- b. Select whether to show grid lines for each axis.
- c. Select whether to include data points on the graph.

- d. Change the parameters, and click **Get Data** to update the graph.
- e. Click **Refresh** to update the graph that is currently on-screen.
- f. Click **Exit** to close the Graphical Logs box and return to the Logs and Reports screen.

Attached Agents Screen

Information on the Attached Agents screen summarizes the agents attached to each load segment of the UPS. Only agents included in the Managed Agent table on the Agent Management screen are available on the Attached Agents screen.

NOTE: One agent can be attached to more than one UPS or UPS load segment. For example, a server that has two power supplies can have each power supply connected to two different UPSs or UPS load segments. To configure redundant support, attach the agent for that server to two UPSs.

IMPORTANT: When planning a redundant configuration, consider that in normal operating conditions, servers with multiple power supplies equally distribute the power load across each power feed. A server with two power supplies applies 50% of the load to each power feed. In the event that one power feed fails, the second power feed must be able to handle 100% of the load. Ensure that each UPS in the redundant configuration can support the entire load in the event of a power failure.

Redundant UPS configurations should be tested thoroughly to ensure the load handling capabilities and power fail settings of each UPS prior to an actual power failure event.

| Attached Agents | | | | | | |
|---|---------------------------------|----------------|----------------|--------------|--------------|--------------------------|
| Load Segment | Name | IP Address | Location | OS | Function | Delete |
| 1 | Proliant DL 590 | 172.25.234.215 | Medford Office | Win NT 4.0 | Email Server | <input type="checkbox"/> |
| 2 | Proliant DL380 | 172.25.234.202 | Medford Office | Win 2000 | Database | <input type="checkbox"/> |
| 3 | Proliant DL760 | 172.25.234.221 | Medford Office | RedHat Linux | Web Server | <input type="checkbox"/> |
| <div> <div>Attach Managed Agent</div> <div>Delete Selection(s)</div> </div> | | | | | | |

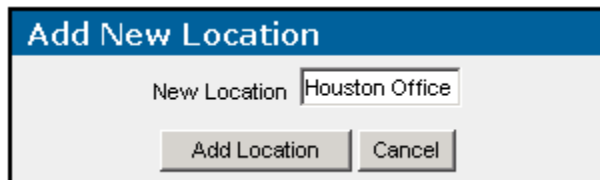
To add or edit an attached agent:

1. Click **Attach Managed Agent** at the bottom of the screen, or click the hyperlink for an existing agent in the Name column. The Add/Edit Attachment box appears.

| Add / Edit Attachment | | | | |
|---|-----------------|----------------|------------|--------------|
| Load Segment | Managed Agents | Location | OS | Function |
| 1 | Proliant DL 590 | Medford Office | Win NT 4.0 | Email Server |
| <div> <div>Apply</div> <div>Undo Changes</div> <div>Cancel</div> </div> | | | | |

2. Select the load segment to which the agent is attached in the Load Segment dropdown box.
3. Select the server name in the Managed Agents dropdown box.

4. Do one of the following:
 - Select the location of the device from the Location dropdown box.
 - Add a new location by selecting **New Location** from the Location dropdown box. The Add New Location box appears.



Enter the name of the location in the New Location field. Click **Add Location**. The new location is available in the Location dropdown box on the Add/Edit Attachment box.

5. Enter the operating system in the OS field.
6. Enter the function in the Function field.
7. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Attachment box open, or click **Cancel** to return to the Attached Agents screen.

To delete an attached agent:

1. Select the checkbox in the Delete column of the Attached Agents screen for the agent you want to delete.
2. Click **Delete Selection(s)**.

Power Fail Settings Screen

One of the most valuable aspects of HP Rack and Power Manager is the ability to work in concert with a UPS to gracefully shut down computer operating systems during a power failure. It is often desirable to prolong the runtime of critical computers (Web servers, domain controllers, databases, and so on) while still allowing protection of essential data by closing down services completely before power is removed. Because other equipment benefiting from the power regulation of a UPS might not serve critical needs, it can be beneficial to be able to shut down such equipment early during a power failure to prolong battery time for the more necessary systems. Power fail settings allow for the prioritization of shutdowns of UPS load segments (banks of power outlets) as well as of the servers receiving power from the UPS (attached agents, for example). Carefully consider the following items before configuring the power failure settings:

- The length of battery protection increases as the load on the UPS decreases.
- After a power outage recovery, another outage could occur before the UPS batteries fully charge. For a more robust system fault tolerance, set the time delay to a value small enough to allow battery reserve for at least two shutdowns.

Shutdown Settings Box

The Shutdown Settings box contains information about the shutdown for UPS load segments and attached servers. When a power failure occurs, the Management Server shuts down affected devices according to these settings. Each load segment and its attached servers are displayed.

To configure the shutdown timings for load segments with no servers attached:

1. Select the load segment you want to configure by clicking its name in the top left corner of the box.

NOTE: If no load segment is selected, the information at the bottom of the box is not displayed.

Shutdown Settings

Click on the Agent or Load Segment in the graph below to view and change settings for that item.

minutes from power fail 0 46

T1500XR on Corp

- Load Segment 1
- Load Segment 2

Delay Time Shutdown Time Off

Load Segment 1

Time delayed before beginning Load Segment Shutdown: 0 minute(s)

☒ Infinite

Submit Cancel

View Restart Settings...

2. Enter the number of minutes that should elapse from the time of the power failure to the beginning of the load segment shutdown.

IMPORTANT: You must configure the runtime. The default runtime setting is Infinite. If the runtime is not configured, the load segment will shut down when the UPS issues a low battery warning.

3. Click **Submit** to save the changes, click **Cancel** to reject all changes and keep the box open, or click **View Restart Settings** to display the Restart Settings box.

To configure the shutdown timings for servers (attached agents):

1. Select the server you want to configure by clicking its name in the top left corner of the box.

NOTE: Select a load segment, and deselect **Infinite** to make individual server settings for that load segment.

NOTE: If no load segment is selected, the information at the bottom of the box is not displayed.

Shutdown Settings

Click on the Agent or Load Segment in the graph below to view and change settings for that item.

minutes from power fail 0 16

- T2200XR
 - Load Segment 1
 - Proliant DL 590
 - Load Segment 2
 - Proliant DL380
 - Load Segment 3
 - Proliant DL760

Delay Time Shutdown Time Off

Proliant DL760 on Load Segment 3

Time delayed before beginning OS shutdown: 10 minute(s)

Time required to shutdown OS: 4 minute(s)

Submit Cancel

View Restart Settings...

2. Enter the number of minutes that should elapse from the time of the power failure to the beginning of the operating system shutdown.
3. Enter the number of minutes needed to completely shut down the operating system.
4. Click **Submit** to save the changes, click **Cancel** to reject all changes and keep the box open, or click **View Restart Settings** to display the Restart Settings box.

Restart Settings Box

The Restart Settings box contains information about the restart for UPS load segments. After shutdown occurs, the Management Server restarts affected devices according to these settings. Each load segment is displayed.

Restart Settings

Click on the Load Segment in the graph below to view and change settings for that item.

minutes from startup 0 60

R1500XR

Load Segment 1

Load Segment 2

Off On

Load Segment 2

Time delayed before startup: 5 minute(s)

Submit Cancel

View Shutdown Settings...

To configure the restart timings:

1. Select the load segment you want to configure by clicking its name in the top left corner of the box.

NOTE: If no load segment is selected, the information at the bottom of the box is not displayed.

2. Enter the number of minutes that should elapse from the time of the power restoration to the beginning of the load segment restart. The maximum delay that can be entered is 60 minutes.
3. Click **Submit** to save the changes, click **Cancel** to reject all changes and keep the box open, or click **View Shutdown Settings** to display the Shutdown Settings box.

Scheduled Shutdowns Screen

Information on the Scheduled Shutdowns screen summarizes the set times at which individual load segments or the entire UPS shuts down and restarts. Scheduled shutdowns can be configured for one time or at daily or weekly intervals.

| Scheduled Shutdowns | | | | |
|--------------------------------|-----------|---------------------|----------|--------------------------|
| Event Affects | Frequency | Shutdown | Restart | Delete |
| Load Segment 1 | Daily | 05:30 PM | 06:00 AM | <input type="checkbox"/> |
| Load Segment 2 | Daily | 06:35 PM | 06:10 AM | <input type="checkbox"/> |
| Add New Scheduled Shutdown | | Delete Selection(s) | | |

To add a shutdown event:

1. Click **Add New Scheduled Shutdown**. The Add Shutdown Event box appears.

| | | | | | |
|--|-----------------|--------------|------|----------------|-------------|
| One Time | | Daily | | Weekly | |
| Affects | Shutdown | | | Restart | |
| | Date | Time | | Date | Time |
| Entire UPS | 09/26/2003 | 9 | : 15 | AM | 09/26/2003 |
| | | | | | 11 : 00 AM |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> <input type="button" value="Cancel"/> | | | | | |

2. Do one of the following:
 - Select the **One Time** tab to schedule a single shutdown event.
 - Select the **Daily** tab to schedule a daily shutdown event.
 - Select the **Weekly** tab to schedule a weekly shutdown event.
3. From the Affects dropdown box, select the components to shut down and restart.
4. Enter the shutdown date (one-time shutdown event), or select the shutdown day (weekly shutdown event) if necessary.
5. Select the shutdown time, using the dropdown boxes in the Shutdown Time column.
6. Enter the restart date (one-time shutdown event), or select the restart day (weekly shutdown event) if necessary.
7. Select the restart time, using the dropdown boxes in the Restart Time column.
8. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add Shutdown Event box open, or click **Cancel** to return to the Scheduled Shutdowns screen.

To edit a shutdown event:

1. Click the hyperlink in the Event Affects column for the shutdown event you want to edit. The Edit Shutdown Event box appears.

Edit Shutdown Event

| Daily | | |
|--------------------------------------|------------------|-----------------------------|
| Affects | Shutdown Time | Restart Time |
| Entire UPS ▾ | 11 ▾ : 00 ▾ AM ▾ | Same Day ▾ at ▾ : 00 ▾ PM ▾ |
| <div>Apply Undo Changes Cancel</div> | | |

2. Edit the information in the Edit Shutdown Event box as needed.
3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Edit Shutdown Event box open, or click **Cancel** to return to the Scheduled Shutdowns screen.

To delete a shutdown event:

1. Select the checkbox in the Delete column of the Scheduled Shutdowns screen for the shutdown event you want to delete.
2. Click **Delete Selection(s)**.

Event Response Overview Screen

The Event Response Overview screen contains a Supported Events table that summarizes the manner in which alerts are issued for each alarm condition on the UPS.

Supported Events

Copy Alert Notification from : T2200XR SRA Copy

| Description | Alert Notifications | | | Computer Command | Device Actions |
|--|---------------------|-----------|------|------------------|----------------|
| | Email | Broadcast | SNMP | | |
| Device connected | - | - | ✓ | - | - |
| Connection lost to device | ✓ | - | ✓ | - | - |
| Device settings changed | ✓ | ✓ | ✓ | - | - |
| Output Overload Cleared | ✓ | ✓ | ✓ | - | - |
| Internal Failure Cleared | ✓ | ✓ | ✓ | - | - |
| Battery Failure Cleared | ✓ | ✓ | ✓ | - | - |
| Diagnostic Test Succeeded | ✓ | ✓ | ✓ | - | - |
| Site Wiring Fault | ✓ | ✓ | ✓ | - | - |
| Site Wiring Normal | ✓ | ✓ | ✓ | - | - |
| Temperature Out of Range Cleared | ✓ | ✓ | ✓ | - | - |
| Shutdown Imminent Cancelled | - | - | - | - | - |
| Input Out of Range | ✓ | - | ✓ | - | - |
| Input Out of Range Cleared | ✓ | - | ✓ | - | - |
| On Buck | ✓ | ✓ | ✓ | - | - |
| On Boost | ✓ | ✓ | ✓ | - | - |
| Load Dump Cleared | - | - | - | - | - |
| Fan Failure Cleared | - | - | - | - | - |
| Battery Discharged | ✓ | ✓ | ✓ | - | - |
| On Battery | ✓ | ✓ | ✓ | - | - |
| On Utility Power | ✓ | ✓ | ✓ | - | - |

When a new UPS is installed, enter the event response information for the related alarm conditions.

- To copy the event response configuration of another UPS, select the UPS you want to copy in the Copy Event Configuration from: field, and click **Copy**.
- To edit the response of individual events, click the hyperlink for the event response you want to edit in the Description column. The Event Response screen appears.

The Event Response screen enables you to configure event responses for supported events. For each event, HP Rack and Power Manager can be configured to send alert notifications (e-mail and broadcast messages and SNMP traps), run a computer command, and initiate a device action (shut down a load segment or release a lockset controlled by the CMC in the same rack as this UPS).

To configure each supported event response:

1. Select the event you want to configure the event response for in the Select Event dropdown box.

| Select Event |
|--------------|
| On Battery |

2. Select the **Alert Notifications** tab, the **Commands** tab, or the **Device Actions** tab.

Alert Notifications Tab

Select the **Alert Notifications** tab to configure the alert notifications.

NOTE: Before an alert notification can be set up, you must first configure the notification recipients. For information about configuring notification recipients, refer to “Notification Recipients Screen” in Chapter 4.

| Alert Notifications | Commands | Device Actions |
|---|----------------|--------------------------|
| Notification Type | Recipient List | Delay |
| Email/Paging | RH 7-3 Admin | 0 |
| | | Delete |
| | | <input type="checkbox"/> |
| <div> Add New Alert Notification Delete Selection(s) Return to Event Summary </div> | | |

To add an alert notification:

1. Click **Add New Alert Notification**. The Add/Edit Notification box appears.

| Add / Edit Notification | | |
|--|----------------|--|
| Notification Type | Recipient List | Delay |
| Email/Paging | Houston Admins | 0 |
| | | <input checked="" type="radio"/> Sec <input type="radio"/> Min |
| <div> Apply Undo Changes Cancel </div> | | |

2. Select the type of notification from the Notification Type dropdown box. Available options are email/paging, broadcast, and SNMP traps.
3. Select the group of recipients that should receive the alert notification from the Recipient List dropdown box. Recipient lists are configured on the Notification Recipients screen.
4. Enter the notification delay in the Delay column, and select a radio button for either seconds or minutes. The delay is the amount of time that elapses between the occurrence of the event and the sending of the notification.
5. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Notification box open, or click **Cancel** to return to the Alert Notifications tab.

To edit an alert notification:

1. Select the event you want to edit from the Select Event dropdown box.
2. Click the hyperlink for the notification you want to edit in the Notification Type column of the Alert Notifications tab. The Add/Edit Notification box appears.
3. Edit the notification type, the recipient list, and the notification delay.
4. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Notification box open, or click **Cancel** to return to the Alert Notifications tab.

To delete an alert notification:

1. Select the checkbox in the Delete column of the Alert Notifications tab for the notification you want to delete.
2. Click **Delete Selection(s)**.

To return to the Event Response Overview screen, click **Return to Event Summary**.

Commands Tab

Select the **Commands** tab to configure the computer commands.

| Alert Notifications | Command | Device Actions | | |
|----------------------|---------------------|-------------------------|--------------------------|--|
| Command | Execute On | Delay | Delete | |
| Calc | Server | 5 sec | <input type="checkbox"/> | |
| Add New Command | Delete Selection(s) | Return to Event Summary | | |

To add a command:

1. Click **Add New Command**. The Add/Edit Command box appears.

| Add / Edit Command | | | |
|--|---|---|--|
| Command | Execute On | Delay | |
| <input type="text"/> | <input type="text" value="Proliant DL760"/> | <input type="text" value="0"/> <input checked="" type="radio"/> Sec <input type="radio"/> Min | |
| <div> Apply Undo Changes Cancel </div> | | | |

2. Enter the command (for example, `C:\start.bat` or `/opt/snapshot.sh`), select the server that the command will run on, and set the notification delay.

NOTE: HP Rack and Power Manager cannot run a command on a server unless the server has a System Agent installed. The batch file or script that will be run must reside on the server on which the command will be executed.

3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Command box open, or click **Cancel** to return to the Commands tab.

IMPORTANT: Remote command execution can be a very powerful tool and should be tested thoroughly before being used for the first time in response to an event. Not all programs and applications are suitable to be executed as a process, especially programs that do not create their own environment. Command execution behavior varies by operating system, and, in general, commands to be executed should be put into a batch file or shell script depending on the operating system that will be executing the commands. Using a batch file or shell script gives you more control over the circumstances in which commands are executed and allows the commands to run in a copy of the environment.

When selecting commands to be executed in the batch file or script file, choose programs and processes that do not require user input or interaction. Since the commands can be executed at any time, it is difficult to predict if a user will be available to interact with any programs that are launched. Verify that specified drive mappings, user specific directories, and programs that require special rights are accessible by the batch file or script file.

Most operating systems have a method for spawning new processes. In Windows operating systems, commands can be preceded with `START`, and in most Linux/Unix systems, `sh` can be used. When designing your batch file or script file, determine which commands require a separate process and which commands can be run one after another in the same process. Refer to the documentation that came with your operating system for more information on batch files or script files.

To edit a command:

1. Select the event you want to edit from the Select Event dropdown box.
2. Click the hyperlink for the command you want to edit in the Command column of the Commands tab. The Add/Edit Command box appears.
3. Enter the command, select the server that the command will run on, and set the command delay.
4. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Command box open, or click **Cancel** to return to the Commands tab.

To delete a command:

1. Select the checkbox in the Delete column of the Commands tab for the command you want to delete.
2. Click **Delete Selection(s)**.

To return to the Event Response Overview screen, click **Return to Event Summary**.

Device Actions Tab

Device actions can be taken on the device you are configuring and on other managed devices. For example, if a CMC detects an over-temperature condition, a device action can be configured to shut down the UPS load segments to which servers affected by the condition are connected.

Select the **Device Actions** tab to configure the device actions.



CAUTION: For each device action that you set, you may need to configure the normal, opposite response. For example, if you configure the UPS to turn off a load segment when an output overload is detected, you may also want to configure the UPS to turn on the load segment when the output overload is resolved.

| Alert Notifications | | Commands | | Device Actions | |
|-------------------------|--|---------------------|--|-------------------------|--------------------------|
| Target Device | | Action to Perform | | Delay | Delete |
| R3000XR | | Turn Off Entire UPS | | 0 | <input type="checkbox"/> |
| Add New Device Action | | Delete Selection(s) | | Return to Event Summary | |

To add a device action:

1. Click **Add New Device Action**. The Add/Edit Device Action box appears.

| Add / Edit Device Action | | |
|--|--------------------|--|
| Target Device | Action to Perform | Delay |
| Proliant DL380 MS | Restart Entire UPS | 0 <input checked="" type="radio"/> Sec <input type="radio"/> Min |
| <div> Apply Undo Changes Cancel </div> | | |

2. Enter the target device, the action to perform, and the notification delay.
3. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Device Action box open, or click **Cancel** to return to the Device Actions tab.

To edit a device action:

1. Select the event you want to edit from the Select Event dropdown box.
2. Click the hyperlink for the device action you want to edit in the Target Device column of the Device Actions tab. The Add/Edit Device Action box appears.
3. Edit the target device, the action to perform, and the action delay.
4. Click **Apply** to accept the information, click **Undo Changes** to reject all changes and keep the Add/Edit Device Action box open, or click **Cancel** to return to the Device Actions tab.

To delete a device action:

1. Select the checkbox in the Delete column of the Device Actions tab for the device action you want to delete.
2. Click **Delete Selection(s)**.

To return to the Event Response Overview screen, click **Return to Event Summary**.

Properties Screen

The Properties screen enables you to enter, edit, or view general information about the UPS.

UPS Properties Box

Information entered on the UPS Properties box is used by HP Rack and Power Manager to identify devices.

| UPS Properties | |
|--|--|
| Parameters | Settings |
| Device Name | <input type="text" value="R5500XR"/> |
| Device Location | <input type="text" value="Houston"/> ▼ |
| UPS Model | R5500 XR |
| Part Number | 326528-001 |
| Serial Number | TV352A2001 |
| Contact Information | <input type="text"/> |
| Power Rating (in VA) | 5000 |
| <input type="button" value="Apply"/> <input type="button" value="Undo Changes"/> | |

To configure the properties:

1. Enter the name of the UPS in the Device Name field to aid in identification when alert messages are sent.
2. Select the location of the UPS in the Device Location field to aid in identification when alert messages are sent.
3. View the UPS model in the UPS Model field. The UPS model aids in identification when alert messages are sent.
4. Enter the user name, e-mail address, or pager number of a person who can provide direct physical access to the UPS in the Contact Information field. This person need not have responsibility for actually maintaining the UPS.
5. View the UPS power rating in the Power Rating field. The UPS power rating aids in identification when alert messages are sent.
6. Click **Apply** to accept the information, or click **Undo Changes** to reject all changes and keep the box open.

Version Control Table

For informational purposes, the applicable firmware versions are displayed.

| Version Control | |
|-----------------|---------|
| Description | Version |
| Communication | 2.20 |
| Inverter | 2.20 |

NOTE: Not all UPSs will display the same list of firmware options.


Diagnostics Screen

The UPS Diagnostics screen enables you to perform diagnostic tests on the UPS.

NOTE: A popup message appears to notify you when you try to run tests on a UPS that does not support diagnostics.

To automatically run UPS diagnostics:

1. Enable automatic diagnostic testing by selecting **Enable Automatic Diagnostics** in the Status box.

A screenshot of the 'Status' box in the UPS Diagnostics screen. It has a blue header with the word 'Status'. Below the header, there is a checkbox labeled 'Enable Automatic Diagnostics'. Underneath the checkbox, the text 'Last run:' and 'Next run:' is displayed.

2. Schedule automatic diagnostics by selecting 30, 60, 90, or 120 days from the Automatically Execute Diagnostics Every: dropdown box on the Schedule box.

A screenshot of the 'Schedule' box in the UPS Diagnostics screen. It has a blue header with the word 'Schedule'. Below the header, the text 'Automatically Execute Diagnostics Every:' is displayed. Underneath this text, there is a dropdown menu showing '30 days' with a downward arrow.

3. Click **Apply** to accept the information, or click **Undo Changes** to reject all changes and keep the screen open.

To immediately perform a manual, one-time UPS self-test, click **Execute Diagnostics Now**.

| Execute Diagnostics Now |
|-------------------------|
| Execute Diagnostics Now |

Manual Control Screen

The Manual Control screen enables you to manually shut down and restart individual load segments or the entire UPS.

To manually shut down a load segment or UPS:

1. Select the radio button for the action you want to perform in the Description column of the Immediate Shutdown box.

| Immediate Shutdown | |
|--|--------------|
| Description | Affects |
| <input type="radio"/> Restart Immediately after Shutdown | Entire UPS ▼ |
| <input type="radio"/> Remain Off after Shutdown | Entire UPS ▼ |
| <input checked="" type="radio"/> Restart after 2 ▼ minutes | Entire UPS ▼ |
| Apply | |

- Select **Restart Immediately after Shutdown** to restart the component as soon as the shutdown completes.
 - Select **Remain Off after Shutdown** if you do not want to restart the component.
 - Select **Restart after *x* minutes** to schedule a timed restart. Select the number of minutes that should pass before the restart initiates in the dropdown box. Options are 2, 5, or 10 minutes.
2. From the Affects dropdown box, select the component you want to shut down that corresponds with the option you selected in the Description column.
 3. Click **Apply** to shut down the component.

IMPORTANT: For attached servers to be shut down gracefully, they must have an agent installed, be attached to a load segment, and have power fail settings configured.

To manually restart a load segment or UPS that remained off after a shutdown:

1. From the Affects dropdown box, select the component you want to restart in the Restart UPS box.

| Restart UPS | |
|-----------------------------|---|
| Description | Affects |
| Restart UPS or Load Segment | Entire UPS <input type="button" value="Apply"/> |

2. Click **Apply** to restart the component.

IMPORTANT: If you use the Remain Off option to shut down a load segment to which the Management Server is attached or to which a server with a Serial Relay Agent installed is attached, you will not be able to restart the UPS with HP Rack and Power Manager. To recover, gracefully shut down the remaining servers on the active load segments of the UPS. Manually power down the UPS using the power button on the UPS, then reapply power to the UPS.

Agents Tab

Click the **Agents** tab in the top frame to view the Managed Agents screen.

Managed Agents Screen

The Managed Agents screen lets you visualize the agents associated to each UPS. Refer to “Attached Agents Screen” in this chapter for information about associating agents with UPSs.

NOTE: Agents that are discovered but not managed do not display on the Managed Agents screen.

| Managed Agents | | | | | | |
|----------------|----------|----------|-----------|------------------------------|----|----------|
| Agent | | | | UPS | | |
| Status | Name | Location | Redundant | Name | LS | Location |
| ✓ | DL360-G2 | Rack 2 | - | T2200XR SRA | 3 | Rack 1 |
| ✓ | Falstaff | Rack 1 | ✓ | T2200XR SRA | 1 | Rack 1 |
| | | | | R1500XR SNMP | 2 | Rack 3 |
| ✓ | Oberon | Rack 4 | - | R1500XR SNMP | 1 | Rack 3 |
| ✗ | Octavius | Rack 4 | - | R1500XR SNMP | 2 | Rack 3 |
| ✗ | Romeo | - | - | T2200XR SRA | 2 | Rack 1 |

Print Reports

The Managed Agents screen can be printed by clicking **Print Reports** at the bottom of the screen. The Managed Agents screen also contains the following components.

Agent Section

NOTE: The information on the Managed Agents screen can be sorted by clicking any column heading in the Agent section.

- **Status** column—Contains a symbol that represents the ability of the Management Server to communicate with the System Agent (✓ normal communication or ✗ communication failure).
- **Name** column—Displays the name of the agent entered on the Agent Management screen. Refer to “Agent Management Screen” in Chapter 4 for more information.
- **Location** column—Displays the location of the agent entered on the Agent Management screen. Refer to “Agent Management Screen” in Chapter 4 for more information.
- **Redundant** column—Displays a checkmark if the agent is associated with more than one UPS.

UPS Section

- **Name** column—Displays the name of the UPS entered on the Device Management screen. Click the UPS name to view the Attached Agents screen for that UPS and edit the UPS name, load segment information, and location.
- **LS** column—Displays the load segment information entered on the Attached Agents screen.
- **Location** column—Displays the location of the UPS entered on the Device Management screen.

NOTE: For more information, refer to “Device Management Screen” in Chapter 4 and “Attached Agents Screen” in this chapter.

Queries Tab

Click the **Queries** tab in the top frame to view the Queries screen.

Queries Screen

The Queries screen enables you to produce a filtered list of devices in the left frame of the Devices menu. In setting up your query, you can limit the devices by querying by location, type, model, and status or combinations thereof.

IMPORTANT: Queries remain in effect until you perform a different query, remove the query, or log out of HP Rack and Power Manager.

Pre-Defined Queries

| Pre-Defined Queries | | |
|---|---------------|---|
| Standard Queries | Current Query | User-Defined Queries |
| <input checked="" type="radio"/> All Devices | All Devices | <input type="radio"/> -- Not Selected ----- |
| <input type="button" value="Use Selected Query"/> | | <input type="button" value="Delete Selected User-Defined Query"/> |

To perform a standard query:

1. Select the radio button to the left of the Standard Queries dropdown box.
2. Select the query you want to use from the Standard Queries dropdown box.
3. Click **Use Selected Query**.

To perform a user-defined query:

1. Select the radio button to the left of the User-Defined Queries dropdown box.
2. Select the query you want to use from the User-Defined Queries dropdown box.
3. Click **Use Selected Query**.

To delete a user-defined query:

1. Select the radio button to the left of the User-Defined Queries dropdown box.
2. Select the query you want to delete from the User-Defined Queries dropdown box.
3. Click **Delete Selected User-Defined Query**.

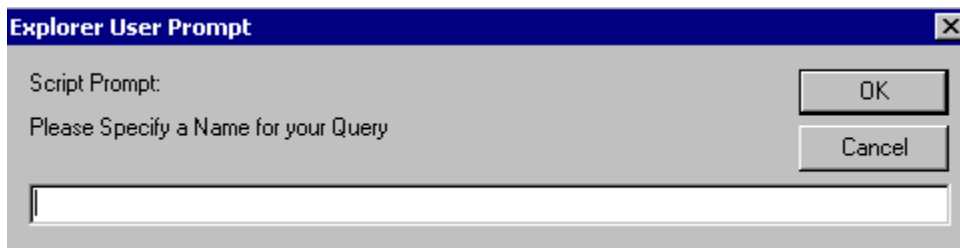
To define a new query:

1. Select the radio button to the left of the User-Defined Queries dropdown box.
2. Select **Custom Query** from the User-Defined Queries dropdown box.
3. Select the criteria from the Add/Edit Query custom queries boxes.

As you make selections within the same box, hold down the **Ctrl** key. Custom queries must be selected from inside the respective boxes.

- **Location**—Managed devices that exist in a specific location. The values shown in this list are taken from the device Properties screen. These values are user-specified.
- **Type**—Specific types of managed devices. The values shown in this list are reported by the system and are not user-specified. Possible values include CMC or UPS.
- **Model**—Specific models of managed devices. The values shown in this list are taken from the device Properties screen. These values are not user-specified.
- **Status**—Managed devices that are reporting a specific alert status. The values shown in this list are reported by the system and are not user-specified. Possible values include normal, minor, major, and critical.

4. Do one of the following:
 - Click **Use and Save this Query**. Enter a name for the query at the prompt.



The query is implemented and appears in the User-Defined Queries dropdown box, available for later use.

- Click **Cancel Changes** to reject all changes.
- Click **Use this Query without Saving It** to perform the query without saving.

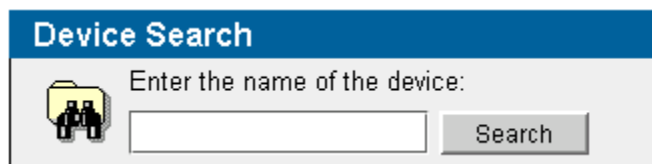
Home Tab

Click the **Home** tab in the top frame to view the Home screen.

Home Screen

Information on the Home screen refreshes every five seconds. On the Home screen:

- Quickly retrieve details about a device, using its name. The search field only allows the following characters to be entered: letters, numbers, tilde, dash, period, underscore, apostrophe, and space. Click **Search** to search for the indicated device.
 - If an exact match is found, only the device that matches the search criteria appears.
 - If an exact match is not found, HP Rack and Power Manager displays a list of devices in the database whose names contain the entered string.
 - If no devices in the database resemble the target device, HP Rack and Power Manager will only give the option to return to the Home screen.






- Set the Home Page Settings by selecting **Show this page when Rack & Power Manager starts** and clicking **Apply**. If this option is not selected, the Devices Home screen is the first screen displayed after you log in to HP Rack and Power Manager.

Home Page Settings





☒ Show this page when Rack & Power Manager starts

- Check the current status of all devices included in the query that are currently running in the Current Status table. Entries in the Current Status table can be sorted by severity, device name, device type, and description by clicking the appropriate column heading. For more information on running queries, refer to “Queries Screen” in this chapter.

| Current Status | | | |
|---|--------------|-------------|---------------|
| Severity | Device Name | Device Type | Description |
|  | R1500XR SNMP | UPS | Device Normal |
|  | R3000XR SNMP | UPS | Device Normal |
|  | T2200XR SRA | UPS | Device Normal |

The icon in the Severity column allows you to determine the status of a device at a glance.

Table 5-5: Status Icons

| Icon | Device Status |
|---|-----------------------------------|
|  | All devices are running normally. |
|  | A minor problem is detected. |
|  | A major problem is detected. |
|  | A critical problem is detected. |

Troubleshooting

If utility power is lost, HP Rack and Power Manager begins an orderly shutdown of the system. HP Rack and Power Manager saves work in progress and logs all significant power and battery events.

For situations other than power outages, note the following:

- The power device must be attached to the server with the correct communications cables. Refer to the documentation that came with your power device.
- The communications cable from the power device to the server must be attached to the communications port as configured in HP Rack and Power Manager for that power device.

Table 6-1 lists troubleshooting items that can occur during HP Rack and Power Manager installation or operation.

Table 6-1: Troubleshooting

| Symptom | Possible Cause | Suggested Action |
|--|---|---|
| During installation, the Serial Relay Agent fails to communicate with the UPS. | The UPS is powered down. | Power up the UPS. |
| | The UPS cable connections are faulty. | Verify that the UPS cable connections are secure. Rerun the Serial Relay Agent Setup Application. |
| | The incorrect COM port was selected when the agent was installed. | Rerun the Serial Relay Agent Setup Application. |
| Installation on a Linux server is unsuccessful. | The proper library is not installed. | Install the compatible library <code>compat-libc++.x.x.x.rpm</code> on the Linux server. |
| HP Rack and Power Manager installs, but does not run on a Linux server. | The proper library is not installed. | Install the compatible library <code>compat-libc++.x.x.x.rpm</code> on the Linux server. |

continued

Table 6-1: Troubleshooting *continued*

| Symptom | Possible Cause | Suggested Action |
|---|--|--|
| When installing the software on a NetWare machine, the following error message displays: "UPS Communication Lost." | The Serial Relay Agent fails to communicate with the UPS. | Verify that the serial cable is plugged into the correct communications port. Be sure to use upper-case letters when entering the communications port, for example, COM2. |
| When upgrading the software on a NetWare machine, the following error message displays: "Failed binding a network handle to the NetXCP port." | Old modules are left from a previous version. | Unload the modules SRA .NLM and SHDNAGNT .NLM and retry the upgrade. |
| Color palettes are managed improperly. | The system is configured to only display 256 colors. | Increase the monitor resolution to display more than 256 colors when browsing into HP Rack and Power Manager. |
| Not all devices and agents in your enterprise are discovered. | The timeout and retries values are too low. | Increase these values on the Automatic Discovery screen and the Manual Discovery screen. |
| | The wrong IP address or IP address range is used. | Verify the IP addresses and IP address ranges on the Automatic Discovery screen and the Manual Discovery screen. |
| | An incorrect Community String is being used. | Verify that the discovery is configured to use the correct Community Strings. |
| | There is no System Agent installed. | Verify that the System Agent is installed and the service is running. |
| CMC sensors are disabled in the Current Status window of the CMC Device Overview screen. | The sensor is not installed. | Install the sensor. |
| | The sensor is not enabled. | Enable the sensor on the Sensor Setup screen. |
| The CMC door-locking feature is not working properly. | The intrusion sensors are not properly assigned. | Assign at least one intrusion sensor to each lockset. |
| Device actions are not working properly. | The normal, opposite response to the initial event response is not configured. | Configure the normal, opposite response to each event on the Device Actions tab of the Event Response screen. |
| Connection to a device is lost. | HP Rack and Power Manager lost communication with the UPS. | Verify the computer interface cable connection. |

continued

Table 6-1: Troubleshooting *continued*

| Symptom | Possible Cause | Suggested Action |
|--|--|---|
| HP Rack and Power Manager does not communicate with a CMC. | The SNMP Read/Write Community string displayed on the CMC Properties screen does not match that on the CMC device. | Use a terminal emulation program to update the strings on the CMC device or change the strings on the CMC Properties screen to match those on the CMC device. |
| | The IP address and subnet mask are not set up correctly. | Verify that the IP address and subnet have been correctly set up on the CMC. |
| | The network cable is faulty. | Replace the cable. |
| After installing HP Rack and Power Manager, you are unable to browse to the Management Server. | Content from the website is being blocked. | If you are browsing from a Windows 2003 machine using Internet Explorer, check the Enhanced Security settings to make sure that the website you are browsing to is a trusted website. |
| HP Rack and Power Manager does not communicate with a UPS. | The UPS is off. | Turn the UPS on. |
| | The System Agent or Serial Relay Agent is not running. | Verify that the agent service is started. |
| | The communications cable is not connected, secured, or properly installed. | Reinstall the communications cable. |
| A Windows 2003 server does not restart after a power loss. | The system requires a hotfix. | Go to http://www.microsoft.com and search for Knowledge Base Article 819760. |
| A Windows 2003-based server does not shutdown gracefully if the user is logged in to the console and has locked the console. | The system requires a hotfix. | Go to http://www.microsoft.com and search for Knowledge Base Article 821287. |
| Low battery | The battery is low on voltage. | Allow the battery to recharge for 24 hours. HP Rack and Power Manager sends a low battery warning approximately two to five minutes before UPS shutdown. This warning is approximate, and the actual time to shutdown can vary significantly. |
| | | Replace the battery. Refer to the documentation that came with the UPS. |

continued

Table 6-1: Troubleshooting *continued*

| Symptom | Possible Cause | Suggested Action |
|---|---|--|
| On battery | The UPS system is operating on battery power. | The UPS will continue to run on battery power until the battery is completely discharged (or until utility power is restored), unless the shutdown parameters specify to turn off both the system and the UPS. |
| On buck | The input voltage is too high for the UPS. The UPS bucks the voltage down to acceptable limits. | Refer to the UPS documentation for information on buck. |
| On boost | The input voltage is too low for the UPS. The UPS boosts the voltage up to acceptable limits. | Refer to the UPS documentation for information on boost. |
| Overload | The device load has exceeded the UPS power rating. | Verify all equipment is drawing within the rated requirements. If necessary, reduce the equipment connected to the UPS. The UPS might need to be reset. |
| The UPS is in Bypass mode. | The load is being powered by utility power. However, utility power continues to be passively filtered by the UPS. Battery protection is not available while in Bypass mode. | Refer to the UPS front panel for alarm indications. If the UPS does not return to normal operation soon, refer to the UPS documentation for troubleshooting information. |
| The diagnostic test is complete. | The diagnostic test of the UPS has completed. | View the results of the diagnostic test on the Logs and Reports screen. |
| No power | A power failure occurred. | Verify that the UPS is connected to a working outlet and that the UPS is powered up. |
| Unable to contact devices | HP Rack and Power Manager is not running. | Start the HP Rack and Power Manager service on the Management Server. |
| Options are disabled. | Some operations require SNMP SET rights. | Verify the SNMP Control community string. |
| Alerts are not received. | The values entered on the Notification Recipients tabs are incorrect. | Enter the correct information. Refer to "Notification Recipients Screen" in Chapter 4 of this guide. |
| Not all devices are listed in the left frame of the Devices menu. | A query is in effect. | Turn off the query. Refer to "Queries Screen" in Chapter 5 of this guide. |

Alert Messages

HP Rack and Power Manager enables you to execute a command, send an e-mail, send a broadcast message, and send SNMP traps to specified recipients if a certain alert situation prevails.



CAUTION: For each device action that you set, you must configure the normal, opposite response. For example, if you configure the CMC to turn on a fan when the temperature exceeds normal, you must also configure the CMC to turn off the fan when the temperature returns to normal.

A list of all message texts is provided in Table A-1.

Table A-1: Alert Messages

| Alert Type | Event Response | Normal, Opposite Response |
|------------|-----------------------------|---------------------------|
| CMC | Aux 1 Alarm | Aux 1 Cleared |
| CMC | Aux 2 Alarm | Aux 2 Cleared |
| CMC | Connection Lost to Device | Device Connected |
| CMC | Device Settings Changed | N/A |
| CMC | Failed to Connect to Device | Device Connected |
| CMC | Humidity Above Maximum | Humidity Normal |
| CMC | Humidity Below Minimum | Humidity Normal |
| CMC | Input 1 Closed | Input 1 Opened |
| CMC | Input 2 Closed | Input 2 Opened |
| CMC | Input 3 Closed | Input 3 Opened |
| CMC | Input 4 Closed | Input 4 Opened |
| CMC | Lockset 1 Error | Lockset 1 Normal |
| CMC | Lockset 1 Failed to Lock | Lockset 1 Normal |
| CMC | Lockset 1 Unlocked | Lockset 1 Locked |
| CMC | Lockset 2 Error | Lockset 2 Normal |
| CMC | Lockset 2 Failed to Lock | Lockset 2 Normal |
| CMC | Lockset 2 Unlocked | Lockset 2 Locked |

continued

Table A-1: Alert Messages *continued*

| Alert Type | Event Response | Normal, Opposite Response |
|------------|---------------------------|----------------------------------|
| CMC | Shock Detected | Shock Cleared |
| CMC | Smoke Detected | Smoke Cleared |
| CMC | Temp 1 Above Maximum | Temperature Normal |
| CMC | Temp 1, High Temp Warning | Temperature Normal |
| CMC | Temp 1 Below Minimum | Temperature Normal |
| CMC | Temp 2 Above Maximum | Temperature Normal |
| CMC | Temp 2, High Temp Warning | Temperature Normal |
| CMC | Temp 2 Below Minimum | Temperature Normal |
| CMC | Voltage Above Maximum | Voltage Normal |
| CMC | Voltage Below Minimum | Voltage Normal |
| UPS | Batteries Disconnected | Batteries Disconnected Cleared |
| UPS | Battery Low | Battery Low Cleared |
| UPS | Battery Discharged | Battery Normal |
| UPS | Battery Failure | Battery Failure Cleared |
| UPS | Bypass Not Available | Bypass Not Available Cleared |
| UPS | On Auto Bypass | On Auto Bypass Cleared |
| UPS | On Manual Bypass | On Manual Bypass Cleared |
| UPS | Check Breaker | Check Breaker Cleared |
| UPS | Manual Load Dumped | Manual Load Dumped Cleared |
| UPS | EPO Initiated | N/A |
| UPS | Input Out of Range | Input Out of Range Cleared |
| UPS | Internal Failure | Internal Failure Cleared |
| UPS | Cabinet Door Open | Cabinet Door Open Cleared |
| UPS | Fan Failure | Fan Failure Cleared |
| UPS | Loss of Redundancy | Loss of Redundancy Cleared |
| UPS | On Battery | On Utility Power |
| UPS | Output Out of Range | Output Voltage Normal |
| UPS | UPS Over Loaded | UPS Over Load Cleared |
| UPS | Shutdown Imminent | Shutdown Imminent Cancelled |
| UPS | Shutdown Pending | Shutdown Pending Cleared |
| UPS | Site Wiring Fault | Site Wiring Normal |
| UPS | Temperature Out of Range | Temperature Out of Range Cleared |
| UPS | UPS Started On Battery | UPS Started On Battery Cleared |

Using HP Rack and Power Manager with HP Systems Insight Manager

HP Rack and Power Manager 1.1 can plug into HP Systems Insight Manager (HPSIM). As a plug-in to HPSIM, HPSIM users can:

- Discover HP Rack and Power Manager Management Servers. As part of the HPSIM discovery process, HPSIM can detect an installed HP Rack and Power Manager Management Server. HP Rack and Power Manager can be launched from the HPSIM Servers Links tab.
- Receive SNMP traps from the Management Server. HP Rack and Power Manager can send event-based traps to HPSIM that include a URL in the trap. This allows administrators to easily launch HP Rack and Power Manager in context. For example, if a UPS goes on battery power, the HP Rack and Power Manager Management Server can send a trap to HPSIM with an attached hyperlink that routes users directly to the HP Rack and Power Manager Device Overview page for that UPS.
- Conveniently launch HP Rack and Power Manager from within HPSIM.
 - Tools menu—Users can add a link to the HP Rack and Power Manager Home page on the HPSIM Tools menu using a tools definition file.
 - Servers Links tab—The HP Rack and Power Manager Home page can be launched from the HPSIM Servers Links tab.
 - Event-based trap—A URL is included in each trap to link directly from HPSIM to the Device Overview page for the specific device for which the trap was sent.

Discovering HP Rack and Power Manager

HPSIM automatically detects HP Rack and Power Manager Management Servers as part of the device discovery process. If detected, an HP Rack and Power Manager hyperlink is included on the HPSIM Links page for the system with the HP Rack and Power Manager Management Server component installed. HP Rack and Power Manager services should be installed and running before attempting discovery through HPSIM. If HP Rack and Power Manager services are not running, it will not appear on the HPSIM Links tab.

Receiving SNMP Traps

Before HPSIM can receive traps from HP Rack and Power Manager, the correct MIB file (CPQRPM.MIB) must be compiled into HPSIM. By default, CPQRPM.MIB version 1.6 is registered. Unregister the version 1.6 MIB and register the version 1.7 MIB located in the MIB folder of HP Rack and Power Management Pack CD.

To verify, unregister, and register a MIB:

1. From the HP\System Insight Manager\mibs folder, note the version of CPQRPM.MIB.
2. If the MIB is not version 1.7, run `MXMIB -D CPQRPM.MIB` from the HP\System Insight Manager folder to unregister the MIB.
3. Verify that the MIB is successfully unregistered by entering `HP\System Insight Manager>mxmib` at the command line. Verify that the old MIB is not listed.
4. Delete and replace or copy over CPQRPM.MIB with the correct version.
5. From the HP\System Insight Manager\mibs folder, run `mcompile cpqrpm.mib` from the command line to compile the new MIB. A new file named CPQRPM.CFG is created.
6. Register the new MIB by entering `mxmib -a cpqrpm.cfg` from the HP\System Insight Manager\mibs command line.
7. Verify that the new MIB is registered by entering `HP\System Insight Manager\mibs>mxmib` at the command line.

NOTE: For more information on uploading and registering a MIB in HPSIM, refer to the *HP Systems Insight Manager Technical Reference Guide* located on the HP Management CD.

Launching HP Rack and Power Manager from the HPSIM Tools Menu

A launch link for each instance of HP Rack and Power Manager can be added to the HPSIM Tools menu. Configure the links using a tool definition file for each instance of HP Rack and Power Manager.

IMPORTANT: The only information that should be edited is shown in bold text.

Example B-1:

```
<?xml version="1.0" encoding="UTF-8" ?>
<tool-list>
  <web-launch-tool name="HPRPM" max-targets="1"
    <category>Local Tools</category>
    <description>HP Rack and Power Manager</description>
    <execute-as-user>root<execute-as user>
    <toolbox-enabled value="true" />
    <web-block accepts-targets="false" />
    <main-url>https://172.25.234.220:3257/</main-url>
  </web-block>
  <attribute name="menu-path">Tools|Integrated
    Consoles</attribute>
  <attribute name="target-frame">RPMFrame</attribute>
</web-launch-tool>
</tool-list>
```

Where:

- **HPRPM** is the name that appears on the Tools menu in HPSIM. The name should be descriptive enough so that it reflects to what it is linked. For example, "HP Rack and Power Management server (Houston)." Since several instances of HP Rack and Power Manager can be added to this menu, HP recommends that this name be unique for every instance.
- **HP Rack and Power Manager** is the description name of the application. This name only appears in the list of tool definition files and is to assist the user in determining which tool definition is for what application.
- **https://172.25.234.220:3257/** is the IP address of the HP Rack and Power Manager Management Server.

Using the command line interface, perform the following steps to add a tool definition file to HPSIM:

1. Create the tool definition file, and save it with a .xml file name extension, for example, `HPRackandPowerManager.xml`.
2. Copy the tool definition file you created in step 1 to the HPSIM program folder. The default folder is `HP\System Insight Manager`.
3. From the HPSIM program folder, run `setnimbusenv`.
4. From the HPSIM program folder, run `mxtool -a -f <filename.xml>`, where `<filename.xml>` is the name you chose in step 1. For example:

```
mxtool -a -f HPRackandPowerManager.xml
```
5. Log out of the current browser session, and log back in before using the new link.
6. Launch HP Rack and Power Manager by selecting **Tools>Integrated Consoles>HPRPM**.

NOTE: After a tool is added, you can edit the tool by modifying the XML tool definition file and committing the changes using `mxtool -m` from the command line. For a complete description of `mxtool` arguments, refer to `hpwebadmin\webapps\mxhelp\mxportal\en\man\mxtool.1m.html` in the HPSIM program folder.

Using HP Rack and Power Manager with HP Insight Manager 7 SP2

HP Rack and Power Manager software can be configured to send alert traps to HP Insight Manager 7, as well as other SNMP management applications. To send event alert traps to Insight Manager 7:

- Configure Insight Manager 7 to receive a trap from HP Rack and Power Manager.
- Configure HP Rack and Power Manager to send the appropriate event alert traps.

Configuring Insight Manager 7 SP2

Verify that the HP Rack and Power Manager MIB (CPQRP.MIB) is registered in Insight Manager 7:

1. Upload the HP Rack and Power Manager MIB. The HP Rack and Power Manager MIB (CPQRP.MIB) can be found on the HP Management CD and in the MIB folder of the HP Rack and Power Management CD.
2. Register the Rack and Power MIB.

NOTE: For additional information on uploading and registering a MIB in Insight Manager 7, refer to the *HP Insight Manager Technical Reference Guide* located on the HP Management CD.

Configuring HP Rack and Power Manager

To configure HP Rack and Power Manager to send traps to Insight Manager 7:

1. Add the Insight Manager 7 server as an SNMP Trap recipient. For information on configuring SNMP Trap recipients, refer to “Notification Recipients Screen” in Chapter 4 of this guide.
2. Configure HP Rack and Power Manager to send alert notifications to Insight Manager 7 as SNMP traps. For more information on configuring alert notifications, refer to “Event Response Overview Screen” in Chapter 5 of this guide.

Backing Up and Restoring Rack and Power Manager

It is always preferable to restore from a full system backup. In the event that a full system backup is not possible, all settings, configurations and devices for HP Rack and Power Manager are stored in the `DEVICESDB1.GDB`, `DB.INI` and `ISC4.GDB` files. At a minimum, it is best to ensure that these files are backed up on a regular basis. If the HP Rack and Power Manager Management Server must be recovered and a full system backup is not available, the Management Server can be recovered using the following steps:

1. Install a new copy of HP Rack and Power Manager.
2. Stop these services or processes in the following order:

| Friendly Name | Windows Service Name | Linux Process Name |
|---|----------------------|--|
| a. HP Management Server | HP Management Server | HP Service Manager HP Device Manager HP Discovery Manager HP Rack Manager |
| b. Firebird Guardian Service | InterBaseGuardian | ibguard |
| c. Firebird Server (if not already stopped) | InterBaseServer | ibserver |

3. Replace the `DEVICESDB1.GDB`, `DB.INI` and `ISC4.GDB` files in the directory in which HP Rack and Power Manager installed them.
4. Restart services or processes in the following order:
 - a. Firebird Guardian Service
 - b. Firebird Server (if not already started)
 - c. HP Management Server
5. After the files have been replaced, log in using the original (backed up) user name and password.

NOTE: Serial Relay Agents and System Agents do not need to restore any files upon reinstallation.

HP Rack and Power Manager Security Considerations

HP Rack and Power Manager implements strict security for two important reasons:

- HP Rack and Power Manager has managed devices that have the potential to perform operations that are sensitive and destructive.
- The application has browser accessibility.

To better ensure the security of HP Rack and Power Manager and the devices it manages, the following topics should be considered in accordance with your organization's security policies and the environment in which HP Rack and Power Manager will operate.

Access to HP Rack and Power Manager requires an account in HP Rack and Power Manager. Logging in requires the use of a user name and password, which should be kept properly secured.

Each account in HP Rack and Power Manager can be given different access levels, providing different capabilities. Ensure that the appropriate access level is granted to users of HP Rack and Power Manager.

Browsing to HP Rack and Power Manager is done using SSL, which encrypts the data between the browser and Management Server. The level of encryption supported by HP Rack and Power Manager is 128-bit. SSL also provides authentication of the Management Server by means of its digital certificate. Securely importing this certificate must be done to ensure the identification of the Management Server.

HP Rack and Power Manager communicates with a CMC device, using the SNMP protocol. SNMP secures requests for data by means of a community string. The community string is configurable at the managed device and from within HP Rack and Power Manager, since both parties must know the community string. Default community strings such as `public` are easily guessed and should be avoided.

NOTE: CMC community strings must be changed both at the device using a HyperTerminal connection and from within HP Rack and Power Manager on the CMC Properties screen.

NOTE: Community string names are case-sensitive.

HP Rack and Power Manager uses a database as its primary storage facility. Access to the database is controlled using a user name and password, which should be configured and kept secure.

HP Rack and Power Manager uses many ports to communicate:

- Port 3256, SSL—Used for communications between the Management Server and Shutdown agent
- Port 3257, HTTP—Used for browsing into the Management Server
- Port 161, SNMP—Used for communications between the Management Server and CMC device
- Port 162, SNMP—Used by the Management Server for sending out traps
- Port 7010, Net-XCP—Used for communications between the Management Server and UPS device

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